

Appendix C: Yearly Productivity Measures

For applying the methodology of measuring productivity to U.S. food manufacturing, two commonly used output indicators, the value of shipments and value added, are available in the *Census of Manufactures* and the *Annual Survey of Manufactures*. Therefore, two alternative approaches in specifying a production function for measuring multifactor and labor productivity indexes are applied in this study. One approach is specifying the “gross” output or real adjusted value of shipments as a function of capital, labor, and intermediate materials inputs. The results from the gross-output approach are presented in appendix tables C1 to C10. Another approach is specifying the “net” output or real net value-added as a function of capital and

labor inputs. The results from the net-output approach are presented in appendix tables C11 to C20.

Each table contains the detailed results of yearly productivity indexes and related measures. The upper part of each table shows the calculated annual rates of changes in output, inputs, and multifactor and labor productivity indexes. The lower part of each table shows and the generated index values using 1975 as the base year. These index series showing the movements of the generated index numbers for output, multifactor, and labor productivity are the input information for use in the figures appearing in the text.

Appendix table C-1—Gross-output productivity of the food manufacturing sector

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	7.49	3.30	1.78	4.19	5.97
1977	2.01	2.85	2.41	-0.83	1.58
1978	3.02	0.96	-1.17	2.06	0.89
1979	-0.70	-2.08	-3.01	1.39	-1.62
1980	0.24	4.40	5.48	-4.16	1.32
1981	2.74	5.17	7.03	-2.43	4.60
1982	2.06	4.01	7.94	-1.94	6.00
1983	0.31	-2.44	-0.31	2.75	2.44
1984	0.99	2.09	2.79	-1.10	1.68
1985	2.21	4.39	6.21	-2.18	4.03
1986	0.44	-1.60	-1.14	2.04	0.90
1987	4.45	2.94	-1.47	1.51	0.04
1988	2.21	-0.96	-3.06	3.18	0.12
1989	-0.89	-1.75	-2.60	0.86	-1.73
1990	1.83	2.38	-0.46	-0.54	-1.00
1991	0.73	3.36	2.62	-2.63	-0.02
1992	4.92	2.07	-2.02	2.85	0.83
1993	1.95	-2.04	-3.43	3.99	0.56
1994	0.78	3.62	2.64	-2.85	-0.21
1995	2.75	2.31	1.67	0.44	2.11
1996	-1.78	-4.08	-3.51	2.29	-1.21
1997	3.56	8.18	6.70	-4.63	2.07
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	107.5	103.3	101.8	104.2	106.0
1977	109.7	106.2	104.2	103.3	107.6
1978	113.0	107.3	103.0	105.5	108.6
1979	112.2	105.0	99.9	106.9	106.8
1980	112.5	109.7	105.4	102.5	108.2
1981	115.5	115.3	112.8	100.0	113.2
1982	117.9	119.9	121.8	98.0	120.0
1983	118.3	117.0	121.4	100.7	122.9
1984	119.5	119.5	124.8	99.6	125.0
1985	122.1	124.7	132.5	97.4	130.0
1986	122.6	122.7	131.0	99.4	131.2
1987	128.1	126.3	129.1	100.9	131.3
1988	130.9	125.1	125.1	104.1	131.4
1989	129.8	122.9	121.9	105.0	129.2
1990	132.1	125.8	121.3	104.5	127.9
1991	133.1	130.1	124.5	101.7	127.8
1992	139.7	132.8	122.0	104.6	128.9
1993	142.4	130.1	117.8	108.8	129.6
1994	143.5	134.8	120.9	105.7	129.4
1995	147.4	137.9	122.9	106.2	132.1
1996	144.8	132.2	118.6	108.6	130.5
1997	150.0	143.1	126.5	103.6	133.2

Appendix table C-2—Gross-output productivity of the meat products industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	6.75	4.10	2.17	2.65	4.82
1977	-3.17	0.22	0.86	-3.39	-2.53
1978	10.00	7.38	4.56	2.62	7.18
1979	0.68	-3.26	-4.00	3.95	-0.05
1980	-5.89	-1.58	-3.93	-4.30	-8.23
1981	1.35	4.67	6.88	-3.32	3.56
1982	1.45	5.42	5.53	-3.96	1.57
1983	-3.48	-4.41	-3.17	0.94	-2.23
1984	-0.31	-0.36	2.46	0.04	2.50
1985	-0.31	4.21	3.83	-4.52	-0.69
1986	1.32	3.04	-1.27	-1.72	-2.99
1987	8.37	8.87	-0.34	-0.50	-0.84
1988	1.02	-3.60	-9.08	4.62	-4.46
1989	-0.75	-1.68	-4.60	0.93	-3.67
1990	3.94	4.39	-0.72	-0.45	-1.17
1991	-1.67	5.08	2.67	-6.75	-4.09
1992	5.21	4.27	-1.47	0.94	-0.53
1993	3.97	1.00	-2.96	2.96	0.00
1994	-2.75	-0.76	-4.26	-2.00	-6.25
1995	1.84	0.64	1.78	1.20	2.98
1996	-3.72	-6.65	-7.51	2.93	-4.58
1997	7.99	10.16	5.01	-2.18	2.83
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	106.7	104.1	102.2	102.7	104.8
1977	103.4	104.3	103.0	99.2	102.2
1978	113.7	112.0	107.7	101.8	109.5
1979	114.5	108.4	103.4	105.8	109.4
1980	107.7	106.6	99.4	101.2	100.4
1981	109.2	111.6	106.2	97.9	104.0
1982	110.8	117.7	112.1	94.0	105.6
1983	106.9	112.5	108.5	94.9	103.3
1984	106.6	112.1	111.2	94.9	105.9
1985	106.3	116.8	115.4	90.6	105.1
1986	107.7	120.3	114.0	89.1	102.0
1987	116.7	131.0	113.6	88.6	101.1
1988	117.9	126.3	103.3	92.7	96.6
1989	117.0	124.2	98.5	93.6	93.1
1990	121.6	129.6	97.8	93.2	92.0
1991	119.6	136.2	100.4	86.9	88.2
1992	125.8	142.0	98.9	87.7	87.8
1993	130.8	143.5	96.0	90.3	87.8
1994	127.2	142.4	91.9	88.5	82.3
1995	129.5	143.3	93.6	89.5	84.7
1996	124.7	133.7	86.5	92.2	80.8
1997	134.7	147.3	90.9	90.2	83.1

Appendix table C-3—Gross-output productivity of the dairy products industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	11.45	7.44	7.87	4.02	11.89
1977	-0.03	1.47	5.49	-1.50	3.99
1978	-1.42	-3.93	-4.50	2.51	-1.99
1979	-1.27	-5.78	-8.07	4.51	-3.56
1980	3.49	7.61	10.70	-4.12	6.58
1981	5.58	8.75	9.09	-3.16	5.93
1982	3.47	6.65	11.16	-3.18	7.98
1983	1.85	0.12	1.94	1.73	3.67
1984	-3.15	-2.26	-4.68	-0.89	-5.56
1985	3.71	8.47	9.07	-4.76	4.31
1986	0.58	-0.64	-1.00	1.22	0.22
1987	4.02	2.51	-1.58	1.51	-0.07
1988	0.09	-3.48	-8.24	3.57	-4.67
1989	-1.97	-1.33	2.01	-0.65	1.36
1990	2.62	3.62	3.73	-1.00	2.73
1991	-2.64	0.58	1.03	-3.21	-2.18
1992	8.40	4.39	-0.54	4.01	3.46
1993	-2.81	-4.73	-3.92	1.92	-2.00
1994	-0.80	4.15	8.16	-4.95	3.21
1995	2.63	4.30	2.16	-1.67	0.50
1996	-0.25	-5.32	-4.42	5.07	0.64
1997	-0.10	5.25	4.47	-5.35	-0.88
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	111.5	107.4	107.9	104.0	111.9
1977	111.4	109.0	113.8	102.5	116.4
1978	109.8	104.7	108.7	105.0	114.0
1979	108.4	98.7	99.9	109.8	110.0
1980	112.2	106.2	110.6	105.2	117.2
1981	118.5	115.5	120.6	101.9	124.2
1982	122.6	123.2	134.1	98.7	134.1
1983	124.9	123.3	136.7	100.4	139.0
1984	120.9	120.5	130.3	99.5	131.2
1985	125.4	130.7	142.1	94.8	136.9
1986	126.2	129.9	140.7	95.9	137.2
1987	131.2	133.1	138.5	97.4	137.1
1988	131.3	128.5	127.1	100.8	130.7
1989	128.8	126.8	129.6	100.2	132.5
1990	132.1	131.4	134.5	99.2	136.1
1991	128.6	132.2	135.8	96.0	133.1
1992	139.4	138.0	135.1	99.8	137.7
1993	135.5	131.4	129.8	101.8	135.0
1994	134.4	136.9	140.4	96.7	139.3
1995	138.0	142.8	143.4	95.1	140.0
1996	137.6	135.2	137.1	99.9	140.9
1997	137.5	142.3	143.2	94.6	139.7

Appendix table C-4—Gross-output productivity of the preserved fruits and vegetables industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	7.26	0.37	2.97	6.89	9.86
1977	10.16	9.39	2.85	0.77	3.61
1978	2.49	1.07	-1.80	1.42	-0.39
1979	-1.18	-0.41	-1.15	-0.77	-1.92
1980	-2.53	3.22	6.81	-5.74	1.06
1981	1.75	3.96	6.64	-2.21	4.43
1982	6.89	4.62	11.40	2.28	13.68
1983	2.20	-1.46	0.39	3.67	4.06
1984	6.03	6.02	3.09	0.01	3.10
1985	3.67	5.63	7.58	-1.96	5.62
1986	-0.18	-5.02	-3.24	4.85	1.60
1987	-0.85	-0.88	1.20	0.04	1.24
1988	1.80	0.16	-0.36	1.64	1.28
1989	5.01	2.05	-0.80	2.96	2.16
1990	2.81	4.22	1.11	-1.41	-0.30
1991	4.25	5.21	3.59	-0.96	2.63
1992	-1.42	-3.16	-2.26	1.74	-0.52
1993	2.53	-1.36	-0.44	3.88	3.44
1994	3.01	5.88	5.57	-2.87	2.70
1995	0.33	1.55	-0.35	-1.22	-1.57
1996	-3.37	-5.41	-3.14	2.05	-1.10
1997	0.19	0.54	3.80	-0.35	3.45
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	106.7	104.1	102.2	102.7	104.8
1977	103.4	104.3	103.0	99.2	102.2
1978	113.7	112.0	107.7	101.8	109.5
1979	114.5	108.4	103.4	105.8	109.4
1980	107.7	106.6	99.4	101.2	100.4
1981	109.2	111.6	106.2	97.9	104.0
1982	110.8	117.7	112.1	94.0	105.6
1983	106.9	112.5	108.5	94.9	103.3
1984	106.6	112.1	111.2	94.9	105.9
1985	106.3	116.8	115.4	90.6	105.1
1986	107.7	120.3	114.0	89.1	102.0
1987	116.7	131.0	113.6	88.6	101.1
1988	117.9	126.3	103.3	92.7	96.6
1989	117.0	124.2	98.5	93.6	93.1
1990	121.6	129.6	97.8	93.2	92.0
1991	119.6	136.2	100.4	86.9	88.2
1992	125.8	142.0	98.9	87.7	87.8
1993	130.8	143.5	96.0	90.3	87.8
1994	127.2	142.4	91.9	88.5	82.3
1995	129.5	143.3	93.6	89.5	84.7
1996	124.7	133.7	86.5	92.2	80.8
1997	134.7	147.3	90.9	90.2	83.1

Appendix table C-5—Gross-output productivity of the grain mill products industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	5.14	1.46	2.45	3.68	6.13
1977	0.86	2.09	4.95	-1.24	3.72
1978	-4.16	-4.18	-6.10	0.02	-6.07
1979	0.93	-1.43	-2.31	2.36	0.05
1980	3.96	6.71	8.55	-2.74	5.80
1981	5.70	8.60	11.33	-2.90	8.43
1982	-2.64	-0.20	6.14	-2.43	3.71
1983	3.87	-0.56	0.49	4.43	4.93
1984	0.00	2.93	8.10	-2.93	5.16
1985	0.75	1.14	5.05	-0.38	4.66
1986	-2.68	-5.74	-5.16	3.06	-2.10
1987	6.29	4.55	-2.96	1.74	-1.22
1988	6.69	3.82	1.55	2.87	4.42
1989	4.49	2.67	2.48	1.82	4.29
1990	0.18	0.39	0.06	-0.22	-0.15
1991	1.09	3.30	3.50	-2.21	1.29
1992	6.01	4.05	-1.84	1.96	0.13
1993	2.99	-2.78	-3.21	5.77	2.56
1994	2.26	4.91	6.35	-2.66	3.69
1995	4.75	3.21	0.97	1.54	2.51
1996	-3.02	2.47	5.46	-5.49	-0.03
1997	3.37	9.03	9.91	-5.65	4.26
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	105.1	101.5	102.5	103.7	106.1
1977	106.0	103.6	107.5	102.4	110.1
1978	101.6	99.3	101.0	102.4	103.4
1979	102.6	97.8	98.6	104.8	103.4
1980	106.6	104.4	107.1	102.0	109.4
1981	112.7	113.4	119.2	99.0	118.7
1982	109.7	113.1	126.5	96.6	123.1
1983	114.0	112.5	127.1	100.9	129.1
1984	114.0	115.8	137.4	97.9	135.8
1985	114.9	117.1	144.4	97.5	142.1
1986	111.8	110.4	136.9	100.5	139.1
1987	118.8	115.4	132.9	102.3	137.4
1988	126.8	119.8	134.9	105.2	143.5
1989	132.5	123.0	138.3	107.1	149.7
1990	132.7	123.5	138.3	106.9	149.4
1991	134.1	127.6	143.2	104.5	151.4
1992	142.2	132.8	140.6	106.6	151.6
1993	146.5	129.1	136.0	112.7	155.4
1994	149.8	135.4	144.7	109.7	161.2
1995	156.9	139.8	146.1	111.4	165.2
1996	152.1	143.2	154.1	105.3	165.2
1997	157.3	156.2	169.3	99.4	172.2

Appendix table C-6—Gross-output productivity of the bakery products industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	6.74	-0.59	-4.45	7.33	2.88
1977	-4.41	-6.12	2.71	1.71	4.42
1978	-1.85	-0.01	-0.36	-1.83	-2.19
1979	0.67	-0.49	-5.26	1.16	-4.11
1980	0.53	5.93	5.08	-5.39	-0.31
1981	4.05	4.25	6.79	-0.20	6.60
1982	4.14	1.90	12.28	2.24	14.52
1983	0.31	-5.10	-1.60	5.40	3.81
1984	2.84	5.51	4.15	-2.67	1.48
1985	9.02	3.98	5.99	5.04	11.03
1986	0.49	-3.75	-1.56	4.24	2.68
1987	8.44	5.50	-3.93	2.94	-0.99
1988	-2.60	0.13	-0.63	-2.73	-3.36
1989	-0.98	-0.17	1.40	-0.81	0.59
1990	1.08	0.71	0.27	0.36	0.63
1991	1.37	2.19	0.63	-0.82	-0.19
1992	7.05	2.16	-2.69	4.89	2.21
1993	3.24	-1.13	-2.63	4.37	1.74
1994	4.01	5.56	2.29	-1.55	0.75
1995	1.24	2.25	1.28	-1.01	0.27
1996	-3.49	-4.60	-1.26	1.11	-0.15
1997	4.62	6.72	9.37	-2.10	7.27
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	106.7	99.4	95.6	107.3	102.9
1977	102.0	93.3	98.1	109.2	107.4
1978	100.1	93.3	97.8	107.2	105.1
1979	100.8	92.9	92.6	108.4	100.8
1980	101.3	98.4	97.4	102.6	100.4
1981	105.5	102.5	104.0	102.4	107.1
1982	109.8	104.5	116.7	104.6	122.6
1983	110.2	99.2	114.9	110.3	127.3
1984	113.3	104.6	119.6	107.4	129.2
1985	123.5	108.8	126.8	112.8	143.4
1986	124.1	104.7	124.8	117.5	147.3
1987	134.6	110.5	119.9	121.0	145.8
1988	131.1	110.6	119.2	117.7	140.9
1989	129.8	110.4	120.8	116.7	141.7
1990	131.2	111.2	121.2	117.2	142.6
1991	133.0	113.7	121.9	116.2	142.4
1992	142.4	116.1	118.6	121.9	145.5
1993	147.0	114.8	115.5	127.2	148.0
1994	152.9	121.2	118.2	125.3	149.1
1995	154.8	123.9	119.7	124.0	149.5
1996	149.4	118.2	118.2	125.4	149.3
1997	156.3	126.1	129.2	122.7	160.2

Appendix table C-7—Gross-output productivity of the sugar and confections industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	-6.18	-5.97	-13.40	-0.20	-13.60
1977	0.04	-2.46	-2.40	2.50	0.10
1978	-2.37	-4.79	-1.78	2.43	0.65
1979	-1.35	0.19	2.09	-1.54	0.54
1980	17.16	16.74	18.80	0.42	19.22
1981	-1.43	3.59	2.30	-5.02	-2.72
1982	-5.19	-4.99	-1.39	-0.20	-1.59
1983	2.66	-2.43	-1.42	5.09	3.66
1984	2.77	4.56	4.30	-1.79	2.50
1985	-0.48	0.26	5.07	-0.74	4.33
1986	1.28	-0.35	1.50	1.63	3.13
1987	5.59	1.05	0.41	4.54	4.95
1988	-1.22	-2.21	-1.92	0.98	-0.94
1989	-1.89	-2.68	-3.54	0.79	-2.75
1990	0.83	2.94	0.01	-2.11	-2.10
1991	4.14	3.49	5.09	0.64	5.73
1992	4.01	0.32	0.04	3.69	3.73
1993	1.55	-1.90	-3.83	3.45	-0.38
1994	-0.66	5.35	4.94	-6.00	-1.07
1995	2.36	0.77	0.84	1.58	2.42
1996	1.63	-3.38	-1.81	5.01	3.21
1997	3.85	7.70	8.03	-3.84	4.19
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	93.8	94.0	86.6	99.8	86.4
1977	93.9	91.7	84.5	102.3	86.5
1978	91.6	87.3	83.0	104.8	87.1
1979	90.4	87.5	84.8	103.2	87.5
1980	105.9	102.1	100.7	103.6	104.3
1981	104.4	105.8	103.0	98.4	101.5
1982	99.0	100.5	101.6	98.2	99.9
1983	101.6	98.1	100.1	103.2	103.5
1984	104.4	102.6	104.4	101.3	106.1
1985	103.9	102.8	109.7	100.6	110.7
1986	105.3	102.5	111.4	102.2	114.2
1987	111.2	103.5	111.8	106.9	119.9
1988	109.8	101.3	109.7	107.9	118.7
1989	107.7	98.5	105.8	108.8	115.5
1990	108.6	101.4	105.8	106.5	113.0
1991	113.1	105.0	111.2	107.2	119.5
1992	117.6	105.3	111.2	111.1	124.0
1993	119.5	103.3	107.0	115.0	123.5
1994	118.7	108.8	112.2	108.1	122.2
1995	121.5	109.7	113.2	109.8	125.2
1996	123.5	106.0	111.1	115.3	129.2
1997	128.2	114.1	120.1	110.8	134.6

Appendix table C-8—Gross-output productivity of the fats and oils industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	5.05	2.99	1.55	2.06	3.60
1977	5.15	4.78	2.42	0.37	2.79
1978	3.97	2.87	-3.17	1.10	-2.07
1979	0.05	-3.88	-3.14	3.92	0.78
1980	-5.65	-1.34	3.34	-4.31	-0.97
1981	-4.70	-3.58	1.49	-1.11	0.38
1982	-7.82	-0.51	5.35	-7.32	-1.96
1983	1.34	0.28	8.92	1.05	9.98
1984	7.74	7.77	11.22	-0.03	11.18
1985	-8.57	-2.24	6.92	-6.32	0.60
1986	-13.12	-11.86	-3.18	-1.26	-4.44
1987	-0.31	0.42	4.45	-0.73	3.72
1988	22.35	14.55	10.29	7.79	18.08
1989	-8.08	-13.18	-13.18	5.10	-8.08
1990	-5.73	-1.58	3.42	-4.15	-0.73
1991	-4.21	1.31	4.53	-5.52	-0.99
1992	-0.06	-0.08	-5.95	0.03	-5.93
1993	5.22	1.96	3.88	3.26	7.14
1994	2.10	3.68	4.65	-1.58	3.07
1995	2.79	4.14	5.37	-1.35	4.02
1996	3.07	-2.62	-1.88	5.69	3.81
1997	10.19	15.34	18.76	-5.15	13.61
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	105.0	103.0	101.5	102.1	103.6
1977	110.5	107.9	104.0	102.4	106.5
1978	114.8	111.0	100.7	103.6	104.3
1979	114.9	106.7	97.5	107.6	105.1
1980	108.4	105.3	100.8	103.0	104.1
1981	103.3	101.5	102.3	101.8	104.5
1982	95.2	101.0	107.8	94.4	102.4
1983	96.5	101.3	117.4	95.4	112.6
1984	104.0	109.1	130.6	95.4	125.2
1985	95.1	106.7	139.6	89.3	126.0
1986	82.6	94.0	135.1	88.2	120.4
1987	82.3	94.4	141.2	87.6	124.9
1988	100.7	108.2	155.7	94.4	147.5
1989	92.6	93.9	135.2	99.2	135.5
1990	87.3	92.4	139.8	95.1	134.5
1991	83.6	93.7	146.1	89.8	133.2
1992	83.6	93.6	137.4	89.8	125.3
1993	87.9	95.4	142.8	92.8	134.3
1994	89.8	98.9	149.4	91.3	138.4
1995	92.3	103.0	157.4	90.1	144.0
1996	95.1	100.3	154.5	95.2	149.4
1997	104.8	115.7	183.5	90.3	169.8

Appendix table C-9—Gross-output productivity of the beverages industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	4.96	-0.07	1.56	5.04	6.60
1977	5.93	4.61	4.51	1.32	5.83
1978	5.80	4.34	1.72	1.47	3.19
1979	-0.84	0.36	-0.51	-1.20	-1.71
1980	3.97	8.74	11.43	-4.77	6.66
1981	5.98	7.84	11.32	-1.86	9.46
1982	6.49	6.92	9.68	-0.43	9.24
1983	1.26	-3.32	-1.13	4.58	3.45
1984	-1.09	1.88	5.45	-2.97	2.48
1985	7.11	7.14	8.20	-0.03	8.18
1986	3.09	-1.48	3.74	4.57	8.31
1987	0.75	-2.55	5.96	3.30	9.26
1988	1.47	-3.03	-1.13	4.50	3.36
1989	-3.81	-5.80	-3.06	2.00	-1.06
1990	0.44	0.55	1.50	-0.11	1.40
1991	4.69	2.46	3.01	2.23	5.24
1992	5.99	0.55	-1.43	5.44	4.02
1993	-0.87	-5.39	-8.84	4.53	-4.32
1994	3.26	4.60	8.19	-1.35	6.85
1995	4.81	2.89	2.35	1.92	4.27
1996	0.30	-3.85	-1.95	4.15	2.20
1997	1.35	9.02	-1.56	-7.67	-9.23
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	105.0	99.9	101.6	105.0	106.6
1977	111.2	104.5	106.1	106.4	112.8
1978	117.6	109.1	108.0	108.0	116.4
1979	116.7	109.5	107.4	106.7	114.4
1980	121.3	119.0	119.7	101.6	122.0
1981	128.5	128.4	133.2	99.7	133.6
1982	136.9	137.2	146.1	99.3	145.9
1983	138.6	132.7	144.5	103.8	151.0
1984	137.1	135.2	152.4	100.7	154.7
1985	146.8	144.8	164.9	100.7	167.4
1986	151.4	142.7	171.0	105.3	181.3
1987	152.5	139.0	181.2	108.8	198.0
1988	154.7	134.8	179.2	113.7	204.7
1989	148.9	127.0	173.7	116.0	202.5
1990	149.5	127.7	176.3	115.8	205.4
1991	156.5	130.9	181.6	118.4	216.1
1992	165.9	131.6	179.0	124.8	224.8
1993	164.5	124.5	163.2	130.5	215.1
1994	169.8	130.2	176.6	128.7	229.8
1995	178.0	134.0	180.7	131.2	239.6
1996	178.5	128.8	177.2	136.7	244.9
1997	180.9	140.4	174.4	126.2	222.3

Appendix table C-10—Gross-output productivity of the miscellaneous foods industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	25.00	16.14	8.44	8.86	17.30
1977	10.08	10.62	-1.03	-0.54	-1.57
1978	1.45	-2.95	-8.05	4.41	-3.65
1979	-6.07	-2.41	-0.93	-3.66	-4.59
1980	-0.14	4.33	6.17	-4.47	1.70
1981	2.51	2.41	1.42	0.10	1.52
1982	5.60	5.85	5.10	-0.25	4.85
1983	-2.75	-3.06	0.27	0.31	0.58
1984	1.80	1.92	2.50	-0.12	2.38
1985	2.59	4.88	7.89	-2.28	5.61
1986	6.14	2.10	4.28	4.04	8.32
1987	4.18	1.00	-7.73	3.18	-4.55
1988	-1.64	-3.93	-2.32	2.30	-0.03
1989	-4.69	-0.27	-1.55	-4.41	-5.97
1990	4.12	1.77	-4.75	2.35	-2.40
1991	0.72	4.17	5.95	-3.44	2.50
1992	5.85	1.96	-5.49	3.89	-1.60
1993	3.48	-3.52	-1.71	7.00	5.29
1994	0.88	5.27	4.89	-4.39	0.50
1995	3.65	2.74	0.07	0.91	0.98
1996	-2.19	-5.03	-8.74	2.84	-5.91
1997	0.42	11.15	11.94	-10.72	1.21
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	125.0	116.1	108.4	108.9	117.3
1977	137.6	128.5	107.3	108.3	115.5
1978	139.6	124.7	98.7	113.0	111.2
1979	131.1	121.7	97.8	108.9	106.1
1980	130.9	126.9	103.8	104.0	107.9
1981	134.2	130.0	105.3	104.1	109.6
1982	141.7	137.6	110.6	103.9	114.9
1983	137.8	133.4	110.9	104.2	115.6
1984	140.3	135.9	113.7	104.1	118.3
1985	144.0	142.6	122.7	101.7	124.9
1986	152.8	145.6	127.9	105.8	135.3
1987	159.2	147.0	118.0	109.2	129.2
1988	156.6	141.2	115.3	111.7	129.2
1989	149.2	140.9	113.5	106.8	121.4
1990	155.4	143.3	108.1	109.3	118.5
1991	156.5	149.3	114.5	105.5	121.5
1992	165.7	152.2	108.3	109.6	119.6
1993	171.4	146.9	106.4	117.3	125.9
1994	172.9	154.6	111.6	112.1	126.5
1995	179.3	158.9	111.7	113.2	127.8
1996	175.3	150.9	101.9	116.4	120.2
1997	176.1	167.7	114.1	103.9	121.7

Appendix table C-11—Net-output productivity of the food manufacturing sector

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	12.82	-1.39	-2.92	14.21	11.30
1977	1.40	-2.10	-2.54	3.50	0.96
1978	2.83	4.28	2.15	-1.45	0.70
1979	-0.08	3.80	2.87	-3.87	-1.00
1980	1.67	8.94	10.02	-7.27	2.75
1981	1.56	5.77	7.63	-4.21	3.42
1982	10.08	2.60	6.53	7.48	14.01
1983	3.09	-6.18	-4.05	9.27	5.22
1984	1.08	4.12	4.82	-3.05	1.77
1985	8.03	-1.78	0.04	9.82	9.85
1986	5.43	-8.09	-7.62	13.52	5.89
1987	6.32	2.29	-2.12	4.03	1.92
1988	1.72	1.91	-0.19	-0.19	-0.37
1989	-2.88	-2.73	-3.58	-0.14	-3.72
1990	3.93	1.28	-1.56	2.65	1.10
1991	2.71	-1.69	-2.43	4.40	1.96
1992	8.61	-0.85	-4.94	9.46	4.52
1993	2.69	-4.46	-5.86	7.16	1.30
1994	2.70	5.31	4.32	-2.61	1.71
1995	3.73	-0.16	-0.79	3.89	3.10
1996	-6.16	2.25	2.82	-8.41	-5.59
1997	7.41	5.64	4.15	1.77	5.92
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	112.8	98.6	97.1	114.2	111.3
1977	114.4	96.5	94.6	118.2	112.4
1978	117.6	100.7	96.6	116.5	113.1
1979	117.5	104.5	99.4	112.0	112.0
1980	119.5	113.8	109.4	103.8	115.1
1981	121.4	120.4	117.7	99.5	119.0
1982	133.6	123.5	125.4	106.9	135.7
1983	137.7	115.9	120.3	116.8	142.8
1984	139.2	120.7	126.1	113.3	145.3
1985	150.4	118.5	126.2	124.4	159.6
1986	158.6	108.9	116.6	141.2	169.0
1987	168.6	111.4	114.1	146.9	172.3
1988	171.5	113.5	113.9	146.6	171.6
1989	166.6	110.4	109.8	146.4	165.3
1990	173.1	111.9	108.1	150.3	167.1
1991	177.8	110.0	105.5	156.9	170.3
1992	193.1	109.0	100.3	171.7	178.0
1993	198.3	104.2	94.4	184.0	180.4
1994	203.7	109.7	98.5	179.2	183.5
1995	211.3	109.5	97.7	186.2	189.1
1996	198.3	112.0	100.4	170.6	178.6
1997	212.9	118.3	104.6	173.6	189.1

Appendix table C-12—Net-output productivity of the meat products industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	6.65	-0.86	-2.79	7.51	4.73
1977	-4.93	-2.24	-1.60	-2.69	-4.29
1978	3.52	4.58	1.76	-1.06	0.70
1979	1.23	-0.27	-1.01	1.51	0.50
1980	-2.17	7.84	5.49	-10.01	-4.52
1981	-2.34	1.10	3.31	-3.44	-0.13
1982	8.24	5.26	5.37	2.99	8.36
1983	-1.75	-6.90	-5.66	5.15	-0.50
1984	3.93	-0.82	2.00	4.75	6.74
1985	12.20	-0.74	-1.12	12.93	11.82
1986	1.54	-4.22	-8.53	5.76	-2.77
1987	0.93	5.15	-4.06	-4.22	-8.28
1988	4.83	3.50	-1.98	1.33	-0.66
1989	2.50	-0.20	-3.12	2.70	-0.42
1990	8.90	4.23	-0.88	4.66	3.78
1991	-5.16	1.23	-1.19	-6.39	-7.58
1992	9.64	1.14	-4.60	8.50	3.90
1993	6.14	-1.89	-5.85	8.02	2.17
1994	7.18	5.62	2.12	1.56	3.68
1995	11.86	0.23	1.37	11.63	13.00
1996	-13.10	3.95	3.09	-17.04	-13.95
1997	25.00	7.10	1.95	17.89	19.84
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	106.7	99.1	97.2	107.5	104.7
1977	101.4	96.9	95.7	104.6	100.2
1978	105.0	101.4	97.3	103.5	100.9
1979	106.3	101.1	96.4	105.1	101.4
1980	104.0	109.0	101.6	94.6	96.9
1981	101.5	110.2	105.0	91.3	96.7
1982	109.9	116.0	110.7	94.0	104.8
1983	108.0	108.0	104.4	98.9	104.3
1984	112.2	107.1	106.5	103.6	111.3
1985	125.9	106.3	105.3	117.0	124.5
1986	127.8	101.8	96.3	123.7	121.0
1987	129.0	107.1	92.4	118.5	111.0
1988	135.2	110.8	90.6	120.0	110.3
1989	138.6	110.6	87.7	123.3	109.8
1990	151.0	115.3	87.0	129.0	114.0
1991	143.2	116.7	85.9	120.8	105.3
1992	157.0	118.0	82.0	131.1	109.4
1993	166.6	115.8	77.2	141.6	111.8
1994	178.6	122.3	78.8	143.8	115.9
1995	199.7	122.6	79.9	160.5	131.0
1996	173.6	127.4	82.4	133.2	112.7
1997	217.0	136.5	84.0	157.0	135.1

Appendix table C-13—Net-output productivity of the dairy products industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	9.17	-4.94	-4.50	14.10	9.60
1977	2.61	-3.39	0.63	6.01	6.63
1978	-3.26	-1.93	-2.50	-1.33	-3.83
1979	5.65	0.20	-2.09	5.45	3.35
1980	1.02	6.93	10.02	-5.91	4.11
1981	0.78	7.21	7.55	-6.43	1.12
1982	3.56	0.36	4.87	3.20	8.08
1983	7.88	-2.72	-0.91	10.60	9.70
1984	-0.01	1.93	-0.49	-1.93	-2.42
1985	4.31	-1.32	-0.73	5.64	4.91
1986	11.55	-7.17	-7.53	18.72	11.19
1987	7.39	2.65	-1.44	4.74	3.30
1988	0.74	2.65	-2.11	-1.91	-4.02
1989	-5.34	-2.16	1.17	-3.18	-2.00
1990	1.77	1.71	1.82	0.06	1.88
1991	4.25	-2.19	-1.74	6.44	4.70
1992	16.10	-0.97	-5.90	17.07	11.16
1993	-3.23	-4.62	-3.81	1.39	-2.41
1994	-4.25	4.58	8.59	-8.83	-0.24
1995	-0.38	0.72	-1.41	-1.10	-2.52
1996	-4.39	1.94	2.84	-6.33	-3.50
1997	9.89	8.72	7.95	1.17	9.12
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	109.2	95.1	95.5	114.1	109.6
1977	112.0	91.8	96.1	121.0	116.9
1978	108.4	90.1	93.7	119.4	112.4
1979	114.5	90.2	91.7	125.9	116.2
1980	115.7	96.5	100.9	118.4	120.9
1981	116.5	103.4	108.5	110.8	122.3
1982	120.7	103.8	113.8	114.3	132.2
1983	130.2	101.0	112.8	126.5	145.0
1984	130.2	102.9	112.3	124.0	141.5
1985	135.8	101.6	111.4	131.0	148.4
1986	151.5	94.3	103.0	155.5	165.0
1987	162.7	96.8	101.6	162.9	170.5
1988	163.9	99.4	99.4	159.8	163.6
1989	155.2	97.2	100.6	154.7	160.3
1990	157.9	98.9	102.4	154.8	163.4
1991	164.6	96.7	100.6	164.8	171.0
1992	191.1	95.8	94.7	192.9	190.1
1993	184.9	91.3	91.1	195.6	185.5
1994	177.1	95.5	98.9	178.3	185.1
1995	176.4	96.2	97.5	176.4	180.4
1996	168.7	98.1	100.3	165.2	174.1
1997	185.4	106.6	108.3	167.1	190.0

Appendix table C-14—Net-output productivity of the preserved fruits and vegetables industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	15.86	-3.52	-0.92	19.38	18.45
1977	11.11	1.44	-5.11	9.67	4.57
1978	0.67	3.30	0.43	-2.63	-2.21
1979	-3.51	6.61	5.87	-10.13	-4.26
1980	-3.12	8.65	12.24	-11.77	0.48
1981	2.28	5.14	7.83	-2.86	4.97
1982	17.00	1.89	8.68	15.11	23.79
1983	3.68	-5.42	-3.57	9.10	5.53
1984	5.35	4.41	1.48	0.94	2.42
1985	6.47	-0.41	1.54	6.87	8.42
1986	7.33	-7.50	-5.72	14.83	9.11
1987	0.07	1.58	3.66	-1.51	2.15
1988	2.97	2.44	1.92	0.53	2.45
1989	4.56	-1.39	-4.24	5.95	1.71
1990	0.49	3.12	0.01	-2.63	-2.62
1991	6.82	0.20	-1.42	6.62	5.21
1992	2.98	-0.42	0.49	3.40	3.88
1993	2.48	-4.53	-3.62	7.01	3.39
1994	1.91	5.23	4.91	-3.31	1.60
1995	-2.15	-0.66	-2.56	-1.49	-4.04
1996	-3.40	0.90	3.17	-4.30	-1.13
1997	5.44	-3.19	0.07	8.63	8.70
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	115.9	96.5	99.1	119.4	118.5
1977	128.7	97.9	94.0	130.9	123.9
1978	129.6	101.1	94.4	127.5	121.1
1979	125.0	107.8	100.0	114.6	116.0
1980	121.1	117.1	112.2	101.1	116.5
1981	123.9	123.1	121.0	98.2	122.3
1982	145.0	125.5	131.5	113.0	151.4
1983	150.3	118.7	126.8	123.3	159.8
1984	158.3	123.9	128.7	124.5	163.7
1985	168.6	123.4	130.7	133.0	177.4
1986	180.9	114.1	123.2	152.8	193.6
1987	181.1	115.9	127.7	150.5	197.8
1988	186.4	118.8	130.1	151.3	202.6
1989	194.9	117.1	124.6	160.3	206.1
1990	195.9	120.8	124.6	156.0	200.7
1991	209.3	121.0	122.9	166.4	211.1
1992	215.5	120.5	123.5	172.0	219.3
1993	220.8	115.0	119.0	184.1	226.8
1994	225.1	121.0	124.8	178.0	230.4
1995	220.2	120.3	121.7	175.3	221.1
1996	212.7	121.3	125.5	167.8	218.6
1997	224.3	117.5	125.6	182.3	237.6

Appendix table C-15—Net-output productivity of the grain mill products industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	11.74	-1.33	-0.33	13.07	12.73
1977	3.69	0.63	3.49	3.06	6.55
1978	-2.92	6.19	4.27	-9.11	-4.84
1979	4.60	1.35	0.47	3.25	3.72
1980	5.06	11.20	13.04	-6.14	6.90
1981	2.82	8.99	11.72	-6.17	5.55
1982	4.94	1.79	8.13	3.15	11.29
1983	7.62	-9.16	-8.11	16.78	8.67
1984	0.36	9.49	14.66	-9.14	5.52
1985	10.91	-1.42	2.49	12.33	14.83
1986	4.34	-10.56	-9.97	14.90	4.92
1987	10.98	4.33	-3.19	6.65	3.46
1988	3.13	4.02	1.74	-0.88	0.86
1989	0.91	-0.64	-0.83	1.55	0.71
1990	4.79	2.10	1.77	2.69	4.46
1991	3.06	-1.86	-1.66	4.92	3.26
1992	7.58	-0.07	-5.96	7.65	1.69
1993	5.41	-4.55	-4.98	9.96	4.98
1994	2.37	6.48	7.91	-4.11	3.80
1995	8.59	0.90	-1.33	7.69	6.36
1996	-25.64	3.22	6.21	-28.87	-22.65
1997	8.83	8.28	9.16	0.55	9.72
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	111.7	98.7	99.7	113.1	112.7
1977	115.9	99.3	103.1	116.5	120.1
1978	112.5	105.4	107.6	105.9	114.3
1979	117.7	106.9	108.1	109.3	118.6
1980	123.6	118.8	122.2	102.6	126.7
1981	127.1	129.5	136.5	96.3	133.8
1982	133.4	131.8	147.6	99.3	148.9
1983	143.5	119.8	135.6	116.0	161.8
1984	144.1	131.1	155.5	105.4	170.7
1985	159.8	129.3	159.4	118.4	196.0
1986	166.7	115.6	143.5	136.1	205.7
1987	185.0	120.6	138.9	145.1	212.8
1988	190.8	125.5	141.3	143.8	214.6
1989	192.5	124.7	140.1	146.0	216.2
1990	201.8	127.3	142.6	150.0	225.8
1991	207.9	124.9	140.2	157.3	233.1
1992	223.7	124.8	131.9	169.4	237.1
1993	235.8	119.2	125.3	186.3	248.9
1994	241.4	126.9	135.2	178.6	258.4
1995	262.1	128.0	133.4	192.3	274.8
1996	194.9	132.1	141.7	136.8	212.5
1997	212.1	143.1	154.7	137.6	233.2

Appendix table C-16—Net-output productivity of the bakery products industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	13.17	-0.89	-4.75	14.06	9.31
1977	-2.30	-7.30	1.54	4.99	6.53
1978	-1.64	3.45	3.10	-5.10	-1.99
1979	0.52	1.79	-2.98	-1.27	-4.25
1980	-0.18	7.43	6.59	-7.61	-1.02
1981	4.59	3.13	5.67	1.46	7.13
1982	7.68	0.74	11.12	6.95	18.07
1983	1.67	-8.26	-4.76	9.93	5.17
1984	3.20	7.11	5.74	-3.91	1.84
1985	11.49	-1.34	0.67	12.83	13.50
1986	2.55	-6.81	-4.63	9.36	4.73
1987	10.06	4.70	-4.73	5.36	0.63
1988	-4.59	2.84	2.08	-7.43	-5.35
1989	-4.96	-2.85	-1.29	-2.11	-3.40
1990	1.55	0.13	-0.31	1.42	1.10
1991	2.64	-0.20	-1.76	2.84	1.07
1992	8.82	0.10	-4.74	8.72	3.98
1993	2.78	-3.41	-4.91	6.19	1.28
1994	4.98	5.92	2.66	-0.94	1.72
1995	0.08	0.51	-0.46	-0.42	-0.89
1996	-2.63	1.63	4.98	-4.26	0.71
1997	6.17	4.32	6.97	1.85	8.82
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	113.2	99.1	95.2	114.1	109.3
1977	110.6	91.9	96.7	119.8	116.4
1978	108.7	95.0	99.7	113.7	114.1
1979	109.3	96.8	96.7	112.2	109.3
1980	109.1	103.9	103.1	103.7	108.2
1981	114.1	107.2	109.0	105.2	115.9
1982	122.9	108.0	121.1	112.5	136.8
1983	124.9	99.1	115.3	123.7	143.9
1984	128.9	106.1	121.9	118.8	146.5
1985	143.8	104.7	122.8	134.1	166.3
1986	147.4	97.5	117.1	146.6	174.2
1987	162.2	102.1	111.5	154.5	175.3
1988	154.8	105.0	113.9	143.0	165.9
1989	147.1	102.0	112.4	140.0	160.3
1990	149.4	102.2	112.0	142.0	162.0
1991	153.3	102.0	110.1	146.0	163.8
1992	166.9	102.1	104.8	158.7	170.3
1993	171.5	98.6	99.7	168.6	172.5
1994	180.0	104.4	102.3	167.0	175.4
1995	180.2	104.9	101.9	166.3	173.9
1996	175.4	106.7	106.9	159.2	175.1
1997	186.3	111.3	114.4	162.1	190.5

Appendix table C-17—Net-output productivity of the sugar and confections industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	10.76	0.42	-7.01	10.34	3.34
1977	5.78	-2.09	-2.02	7.86	5.84
1978	-1.54	-0.84	2.17	-0.69	1.48
1979	-4.58	4.28	6.17	-8.86	-2.69
1980	19.86	8.74	10.80	11.12	21.92
1981	-12.22	5.80	4.51	-18.02	-13.51
1982	13.24	-0.54	3.06	13.78	16.84
1983	2.44	-5.10	-4.09	7.54	3.44
1984	1.11	4.06	3.79	-2.95	0.84
1985	7.21	-4.14	0.67	11.35	12.02
1986	3.71	-8.69	-6.84	12.40	5.56
1987	4.48	1.52	0.87	2.96	3.84
1988	0.83	1.01	1.30	-0.18	1.12
1989	-1.97	-2.82	-3.67	0.85	-2.82
1990	1.66	2.43	-0.50	-0.77	-1.27
1991	6.03	-2.29	-0.69	8.32	7.63
1992	8.22	-0.42	-0.70	8.64	7.94
1993	0.12	-3.45	-5.38	3.57	-1.81
1994	-0.77	6.26	5.85	-7.04	-1.18
1995	1.89	-0.55	-0.48	2.44	1.96
1996	2.99	1.37	2.95	1.62	4.57
1997	5.85	1.27	1.60	4.59	6.19
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	110.8	100.4	93.0	110.3	103.3
1977	117.2	98.3	91.1	119.0	109.4
1978	115.4	97.5	93.1	118.2	111.0
1979	110.1	101.7	98.8	107.7	108.0
1980	131.9	110.5	109.5	119.7	131.7
1981	115.8	117.0	114.4	98.1	113.9
1982	131.2	116.3	117.9	111.7	133.1
1983	134.4	110.4	113.1	120.1	137.7
1984	135.8	114.9	117.4	116.5	138.8
1985	145.6	110.1	118.2	129.8	155.5
1986	151.1	100.6	110.1	145.9	164.1
1987	157.8	102.1	111.1	150.2	170.4
1988	159.1	103.1	112.5	149.9	172.4
1989	156.0	100.2	108.4	151.2	167.5
1990	158.6	102.7	107.8	150.0	165.4
1991	168.2	100.3	107.1	162.5	178.0
1992	182.0	99.9	106.3	176.5	192.1
1993	182.2	96.4	100.6	182.8	188.6
1994	180.8	102.5	106.5	170.0	186.4
1995	184.2	101.9	106.0	174.1	190.0
1996	189.7	103.3	109.1	176.9	198.7
1997	200.8	104.6	110.9	185.1	211.0

Appendix table C-18—Net-output productivity of the fats and oils industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	24.39	-0.38	-1.82	24.77	22.94
1977	-33.32	-1.52	-3.88	-31.79	-35.68
1978	33.69	8.67	2.64	25.02	27.66
1979	14.32	3.51	4.24	10.82	15.06
1980	-11.19	8.20	12.88	-19.40	-6.51
1981	-18.90	7.87	12.95	-26.77	-13.83
1982	11.18	1.30	7.15	9.88	17.04
1983	10.98	-9.47	-0.83	20.45	19.62
1984	-22.78	5.06	8.50	-27.83	-19.34
1985	-0.30	-7.07	2.09	6.76	8.86
1986	4.12	-10.85	-2.17	14.97	12.81
1987	20.34	-3.17	0.86	23.50	24.37
1988	14.15	0.90	-3.36	13.24	9.88
1989	-23.30	-4.75	-4.75	-18.55	-23.30
1990	17.56	-1.93	3.06	19.50	22.56
1991	-10.54	-4.08	-0.85	-6.47	-7.32
1992	-0.74	-3.44	-9.31	2.70	-6.61
1993	7.71	-7.20	-5.28	14.91	9.63
1994	0.67	3.21	4.19	-2.54	1.64
1995	5.01	-2.43	-1.20	7.43	6.24
1996	-11.61	0.78	1.52	-12.39	-10.86
1997	10.34	6.33	9.75	4.01	13.76
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	124.4	99.6	98.2	124.8	122.9
1977	82.9	98.1	94.4	85.1	79.1
1978	110.9	106.6	96.9	106.4	101.0
1979	126.8	110.4	101.0	117.9	116.2
1980	112.6	119.4	114.0	95.0	108.6
1981	91.3	128.8	128.7	69.6	93.6
1982	101.5	130.5	137.9	76.5	109.5
1983	112.7	118.1	136.8	92.1	131.0
1984	87.0	124.1	148.4	66.5	105.7
1985	86.7	115.3	151.5	71.0	115.0
1986	90.3	102.8	148.3	81.6	129.8
1987	108.7	99.6	149.5	100.8	161.4
1988	124.1	100.5	144.5	114.1	177.3
1989	95.2	95.7	137.6	92.9	136.0
1990	111.9	93.8	141.9	111.1	166.7
1991	100.1	90.0	140.6	103.9	154.5
1992	99.3	86.9	127.6	106.7	144.3
1993	107.0	80.7	120.8	122.6	158.2
1994	107.7	83.3	125.9	119.5	160.8
1995	113.1	81.2	124.4	128.3	170.8
1996	100.0	81.9	126.3	112.4	152.3
1997	110.3	87.0	138.6	116.9	173.2

Appendix table C-19—Net-output productivity of the beverages industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	8.92	-0.01	1.62	8.94	10.56
1977	7.08	-1.65	-1.75	8.74	6.98
1978	6.75	6.93	4.31	-0.18	4.13
1979	-3.38	6.30	5.42	-9.67	-4.25
1980	2.77	10.78	13.47	-8.01	5.46
1981	5.68	6.70	10.19	-1.03	9.16
1982	12.62	4.82	7.58	7.80	15.38
1983	3.90	-5.42	-3.23	9.32	6.09
1984	-2.26	3.60	7.17	-5.86	1.31
1985	8.53	-1.98	-0.91	10.51	9.60
1986	5.72	-9.82	-4.60	15.54	10.94
1987	3.22	-2.09	6.42	5.31	11.73
1988	3.21	-0.76	1.13	3.97	5.11
1989	-3.34	-6.20	-3.45	2.86	-0.60
1990	0.16	-2.74	-1.79	2.90	1.11
1991	6.74	-4.96	-4.41	11.70	7.29
1992	9.71	-3.96	-5.94	13.67	7.73
1993	-1.87	-6.74	-10.20	4.87	-5.33
1994	5.33	3.18	6.77	2.15	8.92
1995	3.64	-1.09	-1.63	4.73	3.10
1996	0.93	1.64	3.54	-0.71	2.83
1997	0.08	7.16	-3.42	-7.07	-10.50
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	108.9	100.0	101.6	108.9	110.6
1977	116.6	98.3	99.8	118.5	118.3
1978	124.5	105.1	104.1	118.2	123.2
1979	120.3	111.8	109.8	106.8	117.9
1980	123.6	123.8	124.6	98.2	124.4
1981	130.7	132.1	137.3	97.2	135.8
1982	147.2	138.5	147.7	104.8	156.7
1983	152.9	131.0	142.9	114.6	166.2
1984	149.4	135.7	153.2	107.9	168.4
1985	162.2	133.0	151.8	119.2	184.5
1986	171.5	120.0	144.8	137.8	204.7
1987	177.0	117.4	154.1	145.1	228.7
1988	182.7	116.5	155.8	150.8	240.4
1989	176.6	109.3	150.4	155.1	239.0
1990	176.8	106.3	147.7	159.6	241.6
1991	188.8	101.0	141.2	178.3	259.2
1992	207.1	97.0	132.8	202.7	279.3
1993	203.2	90.5	119.3	212.6	264.4
1994	214.1	93.4	127.4	217.2	288.0
1995	221.9	92.4	125.3	227.4	297.0
1996	223.9	93.9	129.7	225.8	305.4
1997	224.1	100.6	125.3	209.8	273.3

Appendix table C-20—Net-output productivity of the miscellaneous foods industry

Year	Output (1)	Inputs		Productivity	
		Combined (2)	Nonlabor/labor (3)	Multifactor (4)=(1)-(2)	Labor (5)=(3)+(4)
<i>Calculated annual change rate (percent)</i>					
1976	25.42	-1.24	-8.93	26.66	17.72
1977	-3.81	-6.43	-18.08	2.62	-15.46
1978	8.70	5.73	0.63	2.97	3.60
1979	-4.95	11.97	13.45	-16.92	-3.47
1980	1.78	8.03	9.87	-6.25	3.62
1981	10.01	7.69	6.69	2.32	9.01
1982	10.51	1.19	0.44	9.32	9.76
1983	-3.22	-3.96	-0.63	0.74	0.11
1984	4.24	3.50	4.08	0.75	4.83
1985	3.29	-1.33	1.68	4.62	6.30
1986	7.25	-7.60	-5.42	14.85	9.43
1987	12.53	4.80	-3.93	7.73	3.81
1988	-2.00	1.50	3.11	-3.49	-0.39
1989	-13.57	-3.48	-4.76	-10.09	-14.85
1990	10.95	2.58	-3.93	8.37	4.44
1991	-1.45	-1.56	0.22	0.11	0.33
1992	10.16	0.76	-6.68	9.40	2.72
1993	9.26	-4.12	-2.31	13.38	11.07
1994	0.74	6.75	6.37	-6.01	0.36
1995	3.12	0.04	-2.63	3.08	0.45
1996	0.37	2.91	-0.81	-2.54	-3.35
1997	-1.84	9.96	10.75	-11.79	-1.05
<i>Generated index number (1975=100)</i>					
1975	100.0	100.0	100.0	100.0	100.0
1976	125.4	98.8	91.1	126.7	117.7
1977	120.6	92.4	74.6	130.0	99.5
1978	131.1	97.7	75.1	133.8	103.1
1979	124.6	109.4	85.2	111.2	99.5
1980	126.9	118.2	93.6	104.2	103.1
1981	139.6	127.3	99.8	106.7	112.4
1982	154.2	128.8	100.3	116.6	123.4
1983	149.3	123.7	99.6	117.5	123.5
1984	155.6	128.0	103.7	118.3	129.5
1985	160.7	126.3	105.5	123.8	137.7
1986	172.4	116.7	99.7	142.2	150.6
1987	194.0	122.3	95.8	153.2	156.4
1988	190.1	124.1	98.8	147.8	155.8
1989	164.3	119.8	94.1	132.9	132.6
1990	182.3	122.9	90.4	144.0	138.5
1991	179.6	121.0	90.6	144.2	139.0
1992	197.9	121.9	84.5	157.7	142.7
1993	216.2	116.9	82.6	178.9	158.5
1994	217.8	124.8	87.8	168.1	159.1
1995	224.6	124.8	85.5	173.3	159.8
1996	225.4	128.5	84.8	168.9	154.5
1997	221.3	141.3	94.0	149.0	152.9