

APPENDIX B DATA

Appendix B presents the data. First, the results of the Pareto analysis are presented. Then the full data set and the data set with aggregated inputs are presented.

B.1 Results of Pareto Analysis

Table B-1 presents the results of the Pareto analysis. This analysis is performed on the data before normalization. The forth column reports the cumulative percentage. The last fourteen inputs listed in Table B-1 are used as material inputs. The remaining material inputs are combined into a 15th input.

Table B-1. Results of the Pareto Analysis

Index	Cost	Sum of Cost	Cumulative%
7	0	0	0.00
23	137	137	0.00
51	153	289	0.00
37	234	523	0.00
74	4316	4839	0.01
19	4776	9615	0.03
33	4988	14603	0.04
31	5042	19645	0.06
54	5628	25274	0.08
38	5719	30993	0.09
66	5812	36805	0.11
8	6961	43767	0.13
42	7106	50873	0.16
64	9605	60478	0.18
45	10646	71124	0.22
65	10666	81790	0.25
62	11441	93231	0.28
34	11739	104970	0.32
49	12750	117721	0.36
27	12827	130547	0.40
24	14243	144790	0.44
50	14515	159305	0.49

Index	Cost	Sum of Cost	Cumulative%
80	16803	176108	0.54
58	17487	193595	0.59
95	17875	211469	0.64
61	18079	229548	0.70
59	18866	248414	0.76
28	19137	267551	0.82
2	19196	286747	0.87
52	20906	307654	0.94
3	22440	330094	1.01
93	23067	353161	1.08
13	25660	378820	1.16
92	26557	405377	1.24
91	26750	432127	1.32
11	29936	462063	1.41
17	31067	493130	1.50
60	32349	525479	1.60
72	32426	557905	1.70
48	33185	591090	1.80
20	33941	625031	1.91
32	37705	662736	2.02
25	38255	700991	2.14
86	39700	740691	2.26
76	46644	787335	2.40
43	47218	834553	2.55
53	47298	881851	2.69
83	47591	929442	2.83
81	48951	978392	2.98
96	49582	1027974	3.14
44	52834	1080808	3.30
15	58739	1139547	3.48
12	61800	1201347	3.66
14	63479	1264826	3.86
77	65890	1330716	4.06
57	71007	1401722	4.27
67	73720	1475443	4.50
1	76233	1551676	4.73
9	79762	1631438	4.98
47	79790	1711228	5.22
40	81771	1793000	5.47
4	83733	1876732	5.72
89	85843	1962576	5.99

Index	Cost	Sum of Cost	Cumulative%
63	93911	2056487	6.27
70	94009	2150496	6.56
73	98309	2248805	6.86
5	103407	2352212	7.17
39	103733	2455945	7.49
84	106127	2562072	7.81
90	124187	2686259	8.19
82	139454	2825713	8.62
78	142285	2967998	9.05
75	146544	3114542	9.50
29	167641	3282183	10.01
10	176817	3459000	10.55
35	179438	3638438	11.10
69	184187	3822624	11.66
55	190030	4012655	12.24
22	219293	4231948	12.91
41	221036	4452984	13.58
36	257114	4710098	14.36
30	276148	4986246	15.21
Selected Inputs			
46	279614	5265860	16.06
18	328558	5594418	17.06
85	345399	5939817	18.12
21	399797	6339614	19.33
88	414884	6754498	20.60
16	435019	7189516	21.93
6	498166	7687683	23.45
56	565661	8253344	25.17
94	846092	9099435	27.75
71	1488973	10588408	32.29
26	1852265	12440673	37.94
79	2214035	14654709	44.69
68	4948251	19602960	59.79
87	13185877	32788837	100.00

B.2 Data Sets

The data sets are presented in the following tables. The full data set is presented in Tables B-2 and B-3. The aggregated data set is then presented in Table B-4. The Material input only data set is created by eliminating the Salary Hours and Labor Hours from the full data set in Table B-3. Table B-5 presents the week ending dates corresponding to the production plans.

Table B-2. Full Data Set - Material Inputs

	Input 1	Input 2	Input 3	Input 4	Input 5	Input 6	Input 7	Input 8	Input 9	Input 10	Input 11	Input 12	Input 13	Input 14	Input 15
Date	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
3-Sep-94	4.6040	4.3797	4.6853	4.6219	2.7979	5.4076	4.6099	4.8924	5.2093	5.6712	5.1782	4.9386	4.0401	5.9032	7.0751
10-Sep-94	4.6040	4.3797	4.6853	4.6219	2.7979	5.4076	4.6099	4.8924	5.2093	5.6712	5.1782	4.9386	4.0401	5.9032	7.0751
17-Sep-94	4.6040	4.3797	4.6853	4.6219	2.7979	5.4076	4.6099	4.8924	5.2093	5.6712	5.1782	4.9386	4.0401	5.9032	7.0751
24-Sep-94	4.6040	4.3797	4.6853	4.6219	2.7979	5.4076	4.6099	4.8924	5.2093	5.6712	5.1782	4.9386	4.0401	5.9032	7.0751
1-Oct-94	4.6040	4.3797	4.6853	4.6219	2.7979	5.4076	4.6099	4.8924	5.2093	5.6712	5.1782	4.9386	4.0401	5.9032	7.0751
8-Oct-94	5.2141	4.7549	5.1744	6.4459	2.9767	5.2559	5.5728	5.0036	5.9353	5.6712	6.3294	4.9386	5.0200	5.5023	7.7925
15-Oct-94	5.2141	4.7549	5.1744	6.4459	2.9767	5.2559	5.5728	5.0036	5.9353	5.6712	6.3294	4.9386	5.0200	5.5023	7.7925
22-Oct-94	5.2141	4.7549	5.1744	6.4459	2.9767	5.2559	5.5728	5.0036	5.9353	5.6712	6.3294	4.9386	5.0200	5.5023	7.7925
29-Oct-94	5.2141	4.7549	5.1744	6.4459	2.9767	5.2559	5.5728	5.0036	5.9353	5.6712	6.3294	4.9386	5.0200	5.5023	7.7925
5-Nov-94	4.8164	5.4482	4.6150	4.4962	3.8367	5.9558	3.6433	5.4207	4.8509	5.6712	3.4514	4.9386	4.6615	4.4861	6.2904
12-Nov-94	4.8164	5.4482	4.6150	4.4962	3.8367	5.9558	3.6433	5.4207	4.8509	5.6712	3.4514	4.9386	4.6615	4.4861	6.2904
19-Nov-94	4.8164	5.4482	4.6150	4.4962	3.8367	5.9558	3.6433	5.4207	4.8509	5.6712	3.4514	4.9386	4.6615	4.4861	6.2904
26-Nov-94	4.8164	5.4482	4.6150	4.4962	3.8367	5.9558	3.6433	5.4207	4.8509	5.6712	3.4514	4.9386	4.6615	4.4861	6.2904
3-Dec-94	4.5986	4.5474	4.5848	4.8153	4.6767	5.7376	4.4687	5.2928	5.4499	5.6712	5.1782	4.9386	6.4959	6.6606	4.8724
10-Dec-94	4.5986	4.5474	4.5848	4.8153	4.6767	5.7376	4.4687	5.2928	5.4499	5.6712	5.1782	4.9386	6.4959	6.6606	4.8724
17-Dec-94	4.5986	4.5474	4.5848	4.8153	4.6767	5.7376	4.4687	5.2928	5.4499	5.6712	5.1782	4.9386	6.4959	6.6606	4.8724
24-Dec-94	4.5986	4.5474	4.5848	4.8153	4.6767	5.7376	4.4687	5.2928	5.4499	5.6712	5.1782	4.9386	6.4959	6.6606	4.8724
31-Dec-94	4.5986	4.5474	4.5848	4.8153	4.6767	5.7376	4.4687	5.2928	5.4499	5.6712	5.1782	4.9386	6.4959	6.6606	4.8724
7-Jan-95	5.2942	4.8286	6.0367	6.6206	7.3446	6.7219	5.6776	6.0602	7.1990	5.6712	5.9841	4.9386	9.0537	9.4282	6.3705
14-Jan-95	5.2942	4.8286	6.0367	6.6206	7.3446	6.7219	5.6776	6.0602	7.1990	5.6712	5.9841	4.9386	9.0537	9.4282	6.3705
21-Jan-95	5.2942	4.8286	6.0367	6.6206	7.3446	6.7219	5.6776	6.0602	7.1990	5.6712	5.9841	4.9386	9.0537	9.4282	6.3705
28-Jan-95	5.2942	4.8286	6.0367	6.6206	7.3446	6.7219	5.6776	6.0602	7.1990	5.6712	5.9841	4.9386	9.0537	9.4282	6.3705
4-Feb-95	5.8118	5.5793	5.7343	7.5730	6.4552	7.1643	6.9155	5.9370	7.5766	5.6712	6.3294	4.9386	7.9556	8.4398	6.9148
11-Feb-95	5.8118	5.5793	5.7343	7.5730	6.4552	7.1643	6.9155	5.9370	7.5766	5.6712	6.3294	4.9386	7.9556	8.4398	6.9148
18-Feb-95	5.8118	5.5793	5.7343	7.5730	6.4552	7.1643	6.9155	5.9370	7.5766	5.6712	6.3294	4.9386	7.9556	8.4398	6.9148

	Input 1	Input 2	Input 3	Input 4	Input 5	Input 6	Input 7	Input 8	Input 9	Input 10	Input 11	Input 12	Input 13	Input 14	Input 15
Date	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
25-Feb-95	5.8118	5.5793	5.7343	7.5730	6.4552	7.1643	6.9155	5.9370	7.5766	5.6712	6.3294	4.9386	7.9556	8.4398	6.9148
4-Mar-95	5.8651	5.9375	5.8221	5.1087	6.5525	6.5879	5.9103	5.8043	8.5599	5.6712	6.3294	4.9386	6.9609	7.4514	6.6465
11-Mar-95	5.8651	5.9375	5.8221	5.1087	6.5525	6.5879	5.9103	5.8043	8.5599	5.6712	6.3294	4.9386	6.9609	7.4514	6.6465
18-Mar-95	5.8651	5.9375	5.8221	5.1087	6.5525	6.5879	5.9103	5.8043	8.5599	5.6712	6.3294	4.9386	6.9609	7.4514	6.6465
25-Mar-95	5.8651	5.9375	5.8221	5.1087	6.5525	6.5879	5.9103	5.8043	8.5599	5.6712	6.3294	4.9386	6.9609	7.4514	6.6465
1-Apr-95	5.8651	5.9375	5.8221	5.1087	6.5525	6.5879	5.9103	5.8043	8.5599	5.6712	6.3294	4.9386	6.9609	7.4514	6.6465
8-Apr-95	4.9505	5.7769	5.4015	5.9827	6.7249	7.2562	6.9265	5.7186	5.5856	5.6712	5.1023	4.9386	6.0050	5.5013	6.3797
15-Apr-95	4.9505	5.7769	5.4015	5.9827	6.7249	7.2562	6.9265	5.7186	5.5856	5.6712	5.1023	4.9386	6.0050	5.5013	6.3797
22-Apr-95	4.9505	5.7769	5.4015	5.9827	6.7249	7.2562	6.9265	5.7186	5.5856	5.6712	5.1023	4.9386	6.0050	5.5013	6.3797
29-Apr-95	4.9505	5.7769	5.4015	5.9827	6.7249	7.2562	6.9265	5.7186	5.5856	5.6712	5.1023	4.9386	6.0050	5.5013	6.3797
6-May-95	5.9585	6.2221	6.5775	6.5522	6.6580	5.2730	7.5309	6.1070	9.1220	5.6712	8.1216	4.9386	7.1006	7.4514	10.7598
13-May-95	5.9585	6.2221	6.5775	6.5522	6.6580	5.2730	7.5309	6.1070	9.1220	5.6712	8.1216	4.9386	7.1006	7.4514	10.7598
20-May-95	5.9585	6.2221	6.5775	6.5522	6.6580	5.2730	7.5309	6.1070	9.1220	5.6712	8.1216	4.9386	7.1006	7.4514	10.7598
27-May-95	5.9585	6.2221	6.5775	6.5522	6.6580	5.2730	7.5309	6.1070	9.1220	5.6712	8.1216	4.9386	7.1006	7.4514	10.7598
3-Jun-95	5.3221	5.1569	5.0930	4.3029	5.9468	6.4205	5.6662	7.2566	5.2722	5.6712	5.4042	6.3066	4.3172	6.3029	6.0824
10-Jun-95	5.3221	5.1569	5.0930	4.3029	5.9468	6.4205	5.6662	7.2566	5.2722	5.6712	5.4042	6.3066	4.3172	6.3029	6.0824
17-Jun-95	5.3221	5.1569	5.0930	4.3029	5.9468	6.4205	5.6662	7.2566	5.2722	5.6712	5.4042	6.3066	4.3172	6.3029	6.0824
24-Jun-95	5.3221	5.1569	5.0930	4.3029	5.9468	6.4205	5.6662	7.2566	5.2722	5.6712	5.4042	6.3066	4.3172	6.3029	6.0824
1-Jul-95	5.3221	5.1569	5.0930	4.3029	5.9468	6.4205	5.6662	7.2566	5.2722	5.6712	5.4042	6.3066	4.3172	6.3029	6.0824
8-Jul-95	5.8443	5.6633	5.9157	5.8289	6.2710	7.4230	3.9402	6.9614	5.3314	5.6712	5.1199	6.9686	4.9098	5.0006	5.3727
15-Jul-95	5.8443	5.6633	5.9157	5.8289	6.2710	7.4230	3.9402	6.9614	5.3314	5.6712	5.1199	6.9686	4.9098	5.0006	5.3727
22-Jul-95	5.8443	5.6633	5.9157	5.8289	6.2710	7.4230	3.9402	6.9614	5.3314	5.6712	5.1199	6.9686	4.9098	5.0006	5.3727
29-Jul-95	5.8443	5.6633	5.9157	5.8289	6.2710	7.4230	3.9402	6.9614	5.3314	5.6712	5.1199	6.9686	4.9098	5.0006	5.3727
5-Aug-95	6.4507	7.2519	6.6720	8.0291	7.2100	6.1436	7.2138	6.9331	7.2311	5.6712	6.6120	7.5402	6.6493	5.0006	5.7454
12-Aug-95	6.4507	7.2519	6.6720	8.0291	7.2100	6.1436	7.2138	6.9331	7.2311	5.6712	6.6120	7.5402	6.6493	5.0006	5.7454
19-Aug-95	6.4507	7.2519	6.6720	8.0291	7.2100	6.1436	7.2138	6.9331	7.2311	5.6712	6.6120	7.5402	6.6493	5.0006	5.7454
26-Aug-95	6.4507	7.2519	6.6720	8.0291	7.2100	6.1436	7.2138	6.9331	7.2311	5.6712	6.6120	7.5402	6.6493	5.0006	5.7454
2-Sep-95	6.1156	6.6238	7.7706	5.5644	7.0616	7.0225	6.5942	5.9728	5.8716	5.6712	6.6120	7.1150	6.0179	6.7035	4.7196
9-Sep-95	6.1156	6.6238	7.7706	5.5644	7.0616	7.0225	6.5942	5.9728	5.8716	5.6712	6.6120	7.1150	6.0179	6.7035	4.7196
16-Sep-95	6.1156	6.6238	7.7706	5.5644	7.0616	7.0225	6.5942	5.9728	5.8716	5.6712	6.6120	7.1150	6.0179	6.7035	4.7196

	Input 1	Input 2	Input 3	Input 4	Input 5	Input 6	Input 7	Input 8	Input 9	Input 10	Input 11	Input 12	Input 13	Input 14	Input 15
Date	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
23-Sep-95	6.1156	6.6238	7.7706	5.5644	7.0616	7.0225	6.5942	5.9728	5.8716	5.6712	6.6120	7.1150	6.0179	6.7035	4.7196
30-Sep-95	6.1156	6.6238	7.7706	5.5644	7.0616	7.0225	6.5942	5.9728	5.8716	5.6712	6.6120	7.1150	6.0179	6.7035	4.7196
7-Oct-95	7.9107	6.2099	7.9002	6.2466	6.8787	7.2333	7.1725	5.8576	6.6198	5.6712	6.6120	7.2630	7.2936	6.5031	6.8799
14-Oct-95	7.9107	6.2099	7.9002	6.2466	6.8787	7.2333	7.1725	5.8576	6.6198	5.6712	6.6120	7.2630	7.2936	6.5031	6.8799
21-Oct-95	7.9107	6.2099	7.9002	6.2466	6.8787	7.2333	7.1725	5.8576	6.6198	5.6712	6.6120	7.2630	7.2936	6.5031	6.8799
28-Oct-95	7.9107	6.2099	7.9002	6.2466	6.8787	7.2333	7.1725	5.8576	6.6198	5.6712	6.6120	7.2630	7.2936	6.5031	6.8799
4-Nov-95	5.6779	6.2588	5.7297	6.3881	6.4869	5.3689	6.6936	5.1308	5.2080	5.6712	8.1216	6.9812	5.8762	7.5049	3.4447
11-Nov-95	5.6779	6.2588	5.7297	6.3881	6.4869	5.3689	6.6936	5.1308	5.2080	5.6712	8.1216	6.9812	5.8762	7.5049	3.4447
18-Nov-95	5.6779	6.2588	5.7297	6.3881	6.4869	5.3689	6.6936	5.1308	5.2080	5.6712	8.1216	6.9812	5.8762	7.5049	3.4447
25-Nov-95	5.6779	6.2588	5.7297	6.3881	6.4869	5.3689	6.6936	5.1308	5.2080	5.6712	8.1216	6.9812	5.8762	7.5049	3.4447
2-Dec-95	6.5383	6.3143	6.6142	5.5369	6.9181	9.7334	7.9545	9.7828	6.9183	5.6712	4.1965	6.8559	7.1521	6.7035	5.5550
9-Dec-95	6.5383	6.3143	6.6142	5.5369	6.9181	9.7334	7.9545	9.7828	6.9183	5.6712	4.1965	6.8559	7.1521	6.7035	5.5550
16-Dec-95	6.5383	6.3143	6.6142	5.5369	6.9181	9.7334	7.9545	9.7828	6.9183	5.6712	4.1965	6.8559	7.1521	6.7035	5.5550
23-Dec-95	6.5383	6.3143	6.6142	5.5369	6.9181	9.7334	7.9545	9.7828	6.9183	5.6712	4.1965	6.8559	7.1521	6.7035	5.5550
30-Dec-95	6.5383	6.3143	6.6142	5.5369	6.9181	9.7334	7.9545	9.7828	6.9183	5.6712	4.1965	6.8559	7.1521	6.7035	5.5550
6-Jan-96	5.6652	5.1556	5.6670	5.2918	5.8992	5.8186	5.7048	3.6769	4.2395	5.6712	5.1023	6.7228	5.3607	5.5013	4.5328
13-Jan-96	5.6652	5.1556	5.6670	5.2918	5.8992	5.8186	5.7048	3.6769	4.2395	5.6712	5.1023	6.7228	5.3607	5.5013	4.5328
20-Jan-96	5.6652	5.1556	5.6670	5.2918	5.8992	5.8186	5.7048	3.6769	4.2395	5.6712	5.1023	6.7228	5.3607	5.5013	4.5328
27-Jan-96	5.6652	5.1556	5.6670	5.2918	5.8992	5.8186	5.7048	3.6769	4.2395	5.6712	5.1023	6.7228	5.3607	5.5013	4.5328
3-Feb-96	8.3948	6.8225	7.4466	8.9171	6.8324	4.8154	7.3395	7.3313	5.4296	5.6712	8.1216	6.4468	7.8091	5.5013	4.8977
10-Feb-96	8.3948	6.8225	7.4466	8.9171	6.8324	4.8154	7.3395	7.3313	5.4296	5.6712	8.1216	6.4468	7.8091	5.5013	4.8977
17-Feb-96	8.3948	6.8225	7.4466	8.9171	6.8324	4.8154	7.3395	7.3313	5.4296	5.6712	8.1216	6.4468	7.8091	5.5013	4.8977
24-Feb-96	8.3948	6.8225	7.4466	8.9171	6.8324	4.8154	7.3395	7.3313	5.4296	5.6712	8.1216	6.4468	7.8091	5.5013	4.8977
2-Mar-96	9.1916	8.1979	9.2552	6.2536	7.5214	6.7982	6.6112	6.8752	6.7570	5.6712	6.6120	7.4962	6.5850	5.1437	6.2559
9-Mar-96	9.1916	8.1979	9.2552	6.2536	7.5214	6.7982	6.6112	6.8752	6.7570	5.6712	6.6120	7.4962	6.5850	5.1437	6.2559
16-Mar-96	9.1916	8.1979	9.2552	6.2536	7.5214	6.7982	6.6112	6.8752	6.7570	5.6712	6.6120	7.4962	6.5850	5.1437	6.2559
23-Mar-96	9.1916	8.1979	9.2552	6.2536	7.5214	6.7982	6.6112	6.8752	6.7570	5.6712	6.6120	7.4962	6.5850	5.1437	6.2559
30-Mar-96	9.1916	8.1979	9.2552	6.2536	7.5214	6.7982	6.6112	6.8752	6.7570	5.6712	6.6120	7.4962	6.5850	5.1437	6.2559
6-Apr-96	8.2954	8.7942	6.8231	7.1403	7.2821	3.9938	6.6850	5.8576	5.7616	5.6712	8.1216	7.4552	7.2936	5.5551	5.4287
13-Apr-96	8.2954	8.7942	6.8231	7.1403	7.2821	3.9938	6.6850	5.8576	5.7616	5.6712	8.1216	7.4552	7.2936	5.5551	5.4287

	Input 1	Input 2	Input 3	Input 4	Input 5	Input 6	Input 7	Input 8	Input 9	Input 10	Input 11	Input 12	Input 13	Input 14	Input 15
Date	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
20-Apr-96	8.2954	8.7942	6.8231	7.1403	7.2821	3.9938	6.6850	5.8576	5.7616	5.6712	8.1216	7.4552	7.2936	5.5551	5.4287
27-Apr-96	8.2954	8.7942	6.8231	7.1403	7.2821	3.9938	6.6850	5.8576	5.7616	5.6712	8.1216	7.4552	7.2936	5.5551	5.4287
4-May-96	7.1788	10.9600	8.0331	7.7204	8.4005	4.5934	8.0057	7.3114	7.6087	5.6712	6.6120	7.4685	6.1983	7.0981	8.1555
11-May-96	7.1788	10.9600	8.0331	7.7204	8.4005	4.5934	8.0057	7.3114	7.6087	5.6712	6.6120	7.4685	6.1983	7.0981	8.1555
18-May-96	7.1788	10.9600	8.0331	7.7204	8.4005	4.5934	8.0057	7.3114	7.6087	5.6712	6.6120	7.4685	6.1983	7.0981	8.1555
25-May-96	7.1788	10.9600	8.0331	7.7204	8.4005	4.5934	8.0057	7.3114	7.6087	5.6712	6.6120	7.4685	6.1983	7.0981	8.1555
1-Jun-96	7.0692	6.5580	5.3107	7.7489	6.4638	7.0049	6.9248	8.0442	6.1573	10.5057	7.8197	7.0248	5.7602	4.3206	7.0828
8-Jun-96	7.0692	6.5580	5.3107	7.7489	6.4638	7.0049	6.9248	8.0442	6.1573	10.5057	7.8197	7.0248	5.7602	4.3206	7.0828
15-Jun-96	7.0692	6.5580	5.3107	7.7489	6.4638	7.0049	6.9248	8.0442	6.1573	10.5057	7.8197	7.0248	5.7602	4.3206	7.0828
22-Jun-96	7.0692	6.5580	5.3107	7.7489	6.4638	7.0049	6.9248	8.0442	6.1573	10.5057	7.8197	7.0248	5.7602	4.3206	7.0828
29-Jun-96	7.0692	6.5580	5.3107	7.7489	6.4638	7.0049	6.9248	8.0442	6.1573	10.5057	7.8197	7.0248	5.7602	4.3206	7.0828
6-Jul-96	6.4220	6.1456	6.3694	7.3421	6.3357	4.1083	5.5694	4.8076	5.0725	13.3643	6.6120	7.0203	5.1677	5.5551	6.1888
13-Jul-96	6.4220	6.1456	6.3694	7.3421	6.3357	4.1083	5.5694	4.8076	5.0725	13.3643	6.6120	7.0203	5.1677	5.5551	6.1888
20-Jul-96	6.4220	6.1456	6.3694	7.3421	6.3357	4.1083	5.5694	4.8076	5.0725	13.3643	6.6120	7.0203	5.1677	5.5551	6.1888
27-Jul-96	6.4220	6.1456	6.3694	7.3421	6.3357	4.1083	5.5694	4.8076	5.0725	13.3643	6.6120	7.0203	5.1677	5.5551	6.1888

Table B-3. Full Data Set - Part 2

Date	Output Boards	Rework	Scrap	Water Use	Direct Hours	Salary Hours	Power Use
3-Sep-94	4.6694	7.9133	4.1038	7.0599	4.8689	4.9618	5.4250
10-Sep-94	3.5831	5.6558	4.0569	7.0599	3.5434	4.0937	5.4250
17-Sep-94	6.1957	8.2773	5.0983	7.0599	5.5329	4.0937	5.5227
24-Sep-94	4.5300	7.0897	5.4611	7.0599	5.8114	6.2321	5.5618
1-Oct-94	5.2094	8.5638	7.2325	7.0599	5.4049	6.2321	5.5618
8-Oct-94	4.8083	7.7260	4.9072	7.0599	5.4415	5.4095	5.5618
15-Oct-94	5.6327	7.1773	4.8196	7.0599	6.0223	5.4095	4.3792
22-Oct-94	6.5012	5.9632	5.4522	5.3521	5.8564	5.8390	3.4922
29-Oct-94	5.4782	6.0437	4.7860	5.3521	5.8793	5.8390	3.4922
5-Nov-94	4.3012	5.4954	5.4876	5.3521	5.8116	6.7548	3.4922
12-Nov-94	5.0298	6.5674	6.2972	5.3521	5.4492	6.7548	3.4922
19-Nov-94	5.1340	7.6720	4.9559	5.3521	5.8201	3.4438	3.4922
26-Nov-94	4.0490	6.4331	4.4161	5.3521	1.5798	3.4438	9.6301
3-Dec-94	3.8916	5.7311	5.6628	5.3521	5.8442	3.4438	9.6301
10-Dec-94	5.3835	6.9523	6.5016	5.3521	6.3442	3.4438	9.6301
17-Dec-94	4.9049	5.0297	5.8646	5.3521	6.0399	6.1435	7.1953
24-Dec-94	6.0166	6.7034	4.8267	5.3521	5.2393	6.1435	6.2214
31-Dec-94	6.1335	5.1091	4.1985	5.3521	1.3791	3.0870	6.2214
7-Jan-95	4.3258	6.1236	4.5772	5.3521	5.4908	3.0870	6.2214
14-Jan-95	7.8764	6.7599	6.9193	5.3521	6.0627	6.0458	6.2505
21-Jan-95	4.7752	6.0859	4.5524	5.8558	6.3348	6.0458	6.3232
28-Jan-95	7.2997	7.0205	4.9612	5.8558	6.2641	6.2980	6.3232
4-Feb-95	5.8864	5.1748	5.2408	5.8558	5.2160	6.2980	6.3232
11-Feb-95	5.8158	6.9182	5.0903	5.8558	5.8800	6.4389	6.3232
18-Feb-95	6.2711	9.0998	5.1541	5.8558	6.1557	6.4389	6.4901
25-Feb-95	7.0872	7.3249	5.2222	5.8558	6.3722	6.3025	6.5569
4-Mar-95	5.4401	6.1770	4.7347	5.8558	5.9748	6.3025	6.5569
11-Mar-95	6.8124	5.7179	4.8453	5.8558	5.8631	6.3048	6.5569
18-Mar-95	7.2330	6.4794	5.2788	5.8558	6.2098	6.3048	6.3844
25-Mar-95	5.9499	7.3335	5.0143	5.8558	6.2005	7.0229	6.1544
1-Apr-95	6.2809	5.8222	4.9797	5.8558	6.5782	7.0229	6.1544
8-Apr-95	4.8271	4.7126	5.9362	5.8558	6.5303	4.7618	6.1544
15-Apr-95	5.5761	5.5148	5.1797	5.8558	3.9568	4.7618	5.9304
22-Apr-95	7.3325	5.7993	5.9663	10.0251	6.2602	6.6048	5.7624
29-Apr-95	7.5984	6.0213	6.2946	10.0251	6.4718	6.6048	5.7624
6-May-95	6.3660	6.5725	5.7894	10.0251	6.4909	6.6048	5.7624
13-May-95	7.3952	6.8194	6.4432	10.0251	6.7649	6.6048	5.7536
20-May-95	5.9430	5.7479	6.4813	10.0251	6.9139	7.3592	5.7317
27-May-95	4.2750	5.9266	6.0867	4.1062	6.1626	7.3592	5.7317
3-Jun-95	5.9306	4.9533	5.9610	4.1062	4.4149	5.5117	5.7317
10-Jun-95	5.7882	5.2404	6.5291	4.1062	6.4264	5.5117	5.7317
17-Jun-95	6.6962	7.1864	6.9051	4.1062	6.1586	7.1683	3.5740
24-Jun-95	6.2745	4.1872	7.4165	4.1062	6.6628	7.1683	2.7109
1-Jul-95	6.7965	4.6011	6.6812	4.1062	6.5096	4.2528	2.7109

Date	Output Boards	Rework	Scrap	Water Use	Direct Hours	Salary Hours	Power Use
8-Jul-95	4.5668	4.8602	5.1523	4.1062	2.3727	4.2528	2.7109
15-Jul-95	5.9509	5.8889	5.8132	4.1062	6.7457	7.2183	2.7109
22-Jul-95	5.7779	4.9767	6.8016	4.1062	6.8786	7.2183	2.7109
29-Jul-95	6.6235	5.7729	5.5239	4.1062	6.9695	7.3524	2.7109
5-Aug-95	5.0832	4.8933	5.8761	4.1062	6.9082	7.3524	16.3296
12-Aug-95	5.1295	5.8009	5.7425	4.1062	6.5861	7.2615	19.5475
19-Aug-95	5.4205	6.7680	6.1663	4.1062	6.5773	7.2615	6.1699
26-Aug-95	8.1754	7.1722	6.8901	6.2339	6.9299	6.0344	6.1699
2-Sep-95	6.3044	8.3261	6.2132	6.2339	6.4974	6.0344	6.1699
9-Sep-95	9.1495	7.5122	5.7433	6.2339	4.6495	4.6845	6.1699
16-Sep-95	6.4531	6.8652	6.2468	6.2339	6.9737	4.6845	6.1499
23-Sep-95	5.3176	7.6771	6.1459	6.2339	6.9299	6.5321	6.1419
30-Sep-95	7.8695	5.8253	6.9202	6.2339	6.5210	6.5321	6.1419
7-Oct-95	7.1425	6.0004	5.3956	6.2339	7.1581	6.5116	6.1419
14-Oct-95	7.0835	5.3341	6.7211	6.2339	7.2428	6.5116	6.1921
21-Oct-95	7.3026	6.2121	6.5184	6.2339	7.0350	6.4934	6.2297
28-Oct-95	8.2979	5.4064	7.8917	6.2339	7.6272	6.4934	6.2297
4-Nov-95	7.0639	6.8128	7.7112	6.2339	7.2529	6.9434	6.2297
11-Nov-95	5.8012	8.9884	6.4671	6.2339	7.0193	6.9434	6.2027
18-Nov-95	9.2675	7.0301	8.9473	6.2339	7.6024	3.9028	6.0405
25-Nov-95	5.4525	6.2325	4.0755	5.7224	2.3421	3.9028	6.0405
2-Dec-95	8.0328	6.1724	6.8609	5.7224	7.1235	6.5980	6.0405
9-Dec-95	6.8912	9.0347	6.3840	5.7224	7.1634	6.5980	6.0405
16-Dec-95	7.2973	7.8370	5.5920	5.7224	6.6124	6.6843	6.0082
23-Dec-95	8.1394	0.0000	18.0804	5.7224	5.7045	6.6843	5.9953
30-Dec-95	7.5941	4.4448	6.0185	5.7224	4.3345	3.6369	5.9953
6-Jan-96	4.6366	6.7013	4.9886	5.7224	4.2717	3.6369	5.9953
13-Jan-96	3.8866	5.2124	4.6780	5.7224	2.8780	6.5048	6.1265
20-Jan-96	6.1737	7.9652	6.8149	5.7224	7.1051	6.5048	6.4546
27-Jan-96	6.0097	7.3717	7.8970	5.7224	7.1674	7.3297	6.4546
3-Feb-96	6.7198	5.8110	7.5457	5.7224	6.6541	7.3297	6.4546
10-Feb-96	8.8042	5.5021	6.9821	5.7224	7.2945	6.9684	6.4546
17-Feb-96	6.0629	4.0004	8.2978	5.7224	6.9373	6.9684	6.4557
24-Feb-96	5.8488	5.2053	6.9317	6.5408	7.0266	7.0547	6.4561
2-Mar-96	6.1914	5.9383	6.2955	6.5408	7.1953	7.0547	6.4561
9-Mar-96	6.1184	5.3819	6.5291	6.5408	7.3640	7.1320	6.4561
16-Mar-96	7.3920	7.4923	5.9840	6.5408	7.7164	7.1320	6.4900
23-Mar-96	5.6419	6.8057	6.7326	6.5408	7.5326	7.6865	6.5154
30-Mar-96	7.3235	6.8184	7.0538	6.5408	7.6331	7.6865	6.5154
6-Apr-96	6.6592	4.4458	7.1157	6.5408	4.6471	6.1457	6.5154
13-Apr-96	7.4142	6.9039	7.7828	6.5408	6.8932	6.1457	6.5559
20-Apr-96	6.0663	6.1979	6.8246	6.5408	7.0842	7.9614	6.7989
27-Apr-96	5.8491	5.3845	6.5795	6.5408	7.2263	7.9614	6.7989
4-May-96	6.2115	7.0892	5.6345	6.5408	7.1943	7.7319	6.7989
11-May-96	8.3426	6.8769	6.6786	6.5408	7.5497	7.7319	6.8235
18-May-96	6.5250	5.1249	5.9061	6.5408	7.7336	7.6569	6.9711
25-May-96	7.3494	6.6031	6.9237	8.2974	7.8011	7.6569	6.9711

Date	Output Boards	Rework	Scrap	Water Use	Direct Hours	Salary Hours	Power Use
1-Jun-96	5.8904	5.4934	7.0069	8.2974	6.1555	6.2412	6.9711
8-Jun-96	7.5179	4.5751	7.8687	8.2974	7.8512	6.2412	6.9711
15-Jun-96	6.4311	6.1785	6.6919	8.2974	7.7641	8.2273	6.8851
22-Jun-96	6.7708	8.9288	6.7299	8.2974	8.1798	8.2273	6.7704
29-Jun-96	8.1923	5.6863	7.0458	8.2974	7.7027	4.9436	6.7704
6-Jul-96	3.9752	5.6268	4.5621	8.2974	2.1994	4.9436	6.7704
13-Jul-96	5.0520	4.6825	6.5273	8.2974	7.5413	7.9342	6.8679
20-Jul-96	4.3160	7.5259	5.8150	8.2974	7.9116	7.9342	7.1118
27-Jul-96	8.1984	3.2659	11.3726	8.2974	7.9006	8.1114	7.1118

Table B-4. Normalized Data with Material Inputs Aggregated

Obs.	Output Boards	Hours D	Hours S	Material	Power	Rework	Scrap	Water Use
1	4.6694	4.8689	4.9618	4.4391	5.4250	7.9133	4.1038	7.0599
2	3.5831	3.5434	4.0937	4.4391	5.4250	5.6558	4.0569	7.0599
3	6.1957	5.5329	4.0937	4.4391	5.5227	8.2773	5.0983	7.0599
4	4.5300	5.8114	6.2321	4.4391	5.5618	7.0897	5.4611	7.0599
5	5.2094	5.4049	6.2321	4.4391	5.5618	8.5638	7.2325	7.0599
6	4.8083	5.4415	5.4095	5.1368	5.5618	7.7260	4.9072	7.0599
7	5.6327	6.0223	5.4095	5.1368	4.3792	7.1773	4.8196	7.0599
8	6.5012	5.8564	5.8390	5.1368	3.4922	5.9632	5.4522	5.3521
9	5.4782	5.8793	5.8390	5.1368	3.4922	6.0437	4.7860	5.3521
10	4.3012	5.8116	6.7548	4.6380	3.4922	5.4954	5.4876	5.3521
11	5.0298	5.4492	6.7548	4.6380	3.4922	6.5674	6.2972	5.3521
12	5.1340	5.8201	3.4438	4.6380	3.4922	7.6720	4.9559	5.3521
13	4.0490	1.5798	3.4438	4.6380	9.6301	6.4331	4.4161	5.3521
14	3.8916	5.8442	3.4438	4.4591	9.6301	5.7311	5.6628	5.3521
15	5.3835	6.3442	3.4438	4.4591	9.6301	6.9523	6.5016	5.3521
16	4.9049	6.0399	6.1435	4.4591	7.1953	5.0297	5.8646	5.3521
17	6.0166	5.2393	6.1435	4.4591	6.2214	6.7034	4.8267	5.3521
18	6.1335	1.3791	3.0870	4.4591	6.2214	5.1091	4.1985	5.3521
19	4.3258	5.4908	3.0870	5.6581	6.2214	6.1236	4.5772	5.3521
20	7.8764	6.0627	6.0458	5.6581	6.2505	6.7599	6.9193	5.3521
21	4.7752	6.3348	6.0458	5.6581	6.3232	6.0859	4.5524	5.8558
22	7.2997	6.2641	6.2980	5.6581	6.3232	7.0205	4.9612	5.8558
23	5.8864	5.2160	6.2980	6.0770	6.3232	5.1748	5.2408	5.8558
24	5.8158	5.8800	6.4389	6.0770	6.3232	6.9182	5.0903	5.8558
25	6.2711	6.1557	6.4389	6.0770	6.4901	9.0998	5.1541	5.8558
26	7.0872	6.3722	6.3025	6.0770	6.5569	7.3249	5.2222	5.8558
27	5.4401	5.9748	6.3025	5.8365	6.5569	6.1770	4.7347	5.8558
28	6.8124	5.8631	6.3048	5.8365	6.5569	5.7179	4.8453	5.8558
29	7.2330	6.2098	6.3048	5.8365	6.3844	6.4794	5.2788	5.8558
30	5.9499	6.2005	7.0229	5.8365	6.1544	7.3335	5.0143	5.8558

Obs.	Output Boards	Hours D	Hours S	Material	Power	Rework	Scrap	Water Use
31	6.2809	6.5782	7.0229	5.8365	6.1544	5.8222	4.9797	5.8558
32	4.8271	6.5303	4.7618	5.3421	6.1544	4.7126	5.9362	5.8558
33	5.5761	3.9568	4.7618	5.3421	5.9304	5.5148	5.1797	5.8558
34	7.3325	6.2602	6.6048	5.3421	5.7624	5.7993	5.9663	10.0251
35	7.5984	6.4718	6.6048	5.3421	5.7624	6.0213	6.2946	10.0251
36	6.3660	6.4909	6.6048	6.5857	5.7624	6.5725	5.7894	10.0251
37	7.3952	6.7649	6.6048	6.5857	5.7536	6.8194	6.4432	10.0251
38	5.9430	6.9139	7.3592	6.5857	5.7317	5.7479	6.4813	10.0251
39	4.2750	6.1626	7.3592	6.5857	5.7317	5.9266	6.0867	4.1062
40	5.9306	4.4149	5.5117	5.2229	5.7317	4.9533	5.9610	4.1062
41	5.7882	6.4264	5.5117	5.2229	5.7317	5.2404	6.5291	4.1062
42	6.6962	6.1586	7.1683	5.2229	3.5740	7.1864	6.9051	4.1062
43	6.2745	6.6628	7.1683	5.2229	2.7109	4.1872	7.4165	4.1062
44	6.7965	6.5096	4.2528	5.2229	2.7109	4.6011	6.6812	4.1062
45	4.5668	2.3727	4.2528	5.7156	2.7109	4.8602	5.1523	4.1062
46	5.9509	6.7457	7.2183	5.7156	2.7109	5.8889	5.8132	4.1062
47	5.7779	6.8786	7.2183	5.7156	2.7109	4.9767	6.8016	4.1062
48	6.6235	6.9695	7.3524	5.7156	2.7109	5.7729	5.5239	4.1062
49	5.0832	6.9082	7.3524	6.7396	16.3296	4.8933	5.8761	4.1062
50	5.1295	6.5861	7.2615	6.7396	19.5475	5.8009	5.7425	4.1062
51	5.4205	6.5773	7.2615	6.7396	6.1699	6.7680	6.1663	4.1062
52	8.1754	6.9299	6.0344	6.7396	6.1699	7.1722	6.8901	6.2339
53	6.3044	6.4974	6.0344	6.1727	6.1699	8.3261	6.2132	6.2339
54	9.1495	4.6495	4.6845	6.1727	6.1699	7.5122	5.7433	6.2339
55	6.4531	6.9737	4.6845	6.1727	6.1499	6.8652	6.2468	6.2339
56	5.3176	6.9299	6.5321	6.1727	6.1419	7.6771	6.1459	6.2339
57	7.8695	6.5210	6.5321	6.1727	6.1419	5.8253	6.9202	6.2339
58	7.1425	7.1581	6.5116	7.3026	6.1419	6.0004	5.3956	6.2339
59	7.0835	7.2428	6.5116	7.3026	6.1921	5.3341	6.7211	6.2339
60	7.3026	7.0350	6.4934	7.3026	6.2297	6.2121	6.5184	6.2339
61	8.2979	7.6272	6.4934	7.3026	6.2297	5.4064	7.8917	6.2339
62	7.0639	7.2529	6.9434	5.6432	6.2297	6.8128	7.7112	6.2339
63	5.8012	7.0193	6.9434	5.6432	6.2027	8.9884	6.4671	6.2339
64	9.2675	7.6024	3.9028	5.6432	6.0405	7.0301	8.9473	6.2339
65	5.4525	2.3421	3.9028	5.6432	6.0405	6.2325	4.0755	5.7224
66	8.0328	7.1235	6.5980	6.4717	6.0405	6.1724	6.8609	5.7224
67	6.8912	7.1634	6.5980	6.4717	6.0405	9.0347	6.3840	5.7224
68	7.2973	6.6124	6.6843	6.4717	6.0082	7.8370	5.5920	5.7224
69	8.1394	5.7045	6.6843	6.4717	5.9953	0.0000	18.0804	5.7224
70	7.5941	4.3345	3.6369	6.4717	5.9953	4.4448	6.0185	5.7224
71	4.6366	4.2717	3.6369	5.2703	5.9953	6.7013	4.9886	5.7224
72	3.8866	2.8780	6.5048	5.2703	6.1265	5.2124	4.6780	5.7224
73	6.1737	7.1051	6.5048	5.2703	6.4546	7.9652	6.8149	5.7224
74	6.0097	7.1674	7.3297	5.2703	6.4546	7.3717	7.8970	5.7224
75	6.7198	6.6541	7.3297	7.5989	6.4546	5.8110	7.5457	5.7224
76	8.8042	7.2945	6.9684	7.5989	6.4546	5.5021	6.9821	5.7224

Obs.	Output Boards	Hours D	Hours S	Material	Power	Rework	Scrap	Water Use
77	6.0629	6.9373	6.9684	7.5989	6.4557	4.0004	8.2978	5.7224
78	5.8488	7.0266	7.0547	7.5989	6.4561	5.2053	6.9317	6.5408
79	6.1914	7.1953	7.0547	8.2738	6.4561	5.9383	6.2955	6.5408
80	6.1184	7.3640	7.1320	8.2738	6.4561	5.3819	6.5291	6.5408
81	7.3920	7.7164	7.1320	8.2738	6.4900	7.4923	5.9840	6.5408
82	5.6419	7.5326	7.6865	8.2738	6.5154	6.8057	6.7326	6.5408
83	7.3235	7.6331	7.6865	8.2738	6.5154	6.8184	7.0538	6.5408
84	6.6592	4.6471	6.1457	7.6857	6.5154	4.4458	7.1157	6.5408
85	7.4142	6.8932	6.1457	7.6857	6.5559	6.9039	7.7828	6.5408
86	6.0663	7.0842	7.9614	7.6857	6.7989	6.1979	6.8246	6.5408
87	5.8491	7.2263	7.9614	7.6857	6.7989	5.3845	6.5795	6.5408
88	6.2115	7.1943	7.7319	8.0497	6.7989	7.0892	5.6345	6.5408
89	8.3426	7.5497	7.7319	8.0497	6.8235	6.8769	6.6786	6.5408
90	6.5250	7.7336	7.6569	8.0497	6.9711	5.1249	5.9061	6.5408
91	7.3494	7.8011	7.6569	8.0497	6.9711	6.6031	6.9237	8.2974
92	5.8904	6.1555	6.2412	7.6241	6.9711	5.4934	7.0069	8.2974
93	7.5179	7.8512	6.2412	7.6241	6.9711	4.5751	7.8687	8.2974
94	6.4311	7.7641	8.2273	7.6241	6.8851	6.1785	6.6919	8.2974
95	6.7708	8.1798	8.2273	7.6241	6.7704	8.9288	6.7299	8.2974
96	8.1923	7.7027	4.9436	7.6241	6.7704	5.6863	7.0458	8.2974
97	3.9752	2.1994	4.9436	7.4476	6.7704	5.6268	4.5621	8.2974
98	5.0520	7.5413	7.9342	7.4476	6.8679	4.6825	6.5273	8.2974
99	4.3160	7.9116	7.9342	7.4476	7.1118	7.5259	5.8150	8.2974
100	8.1984	7.9006	8.1114	7.4476	7.1118	3.2659	11.3726	8.2974

Table B-5. Week Ending Dates for Production Plans

Date	Production Plan
3-Sep-94	1
10-Sep-94	2
17-Sep-94	3
24-Sep-94	4
1-Oct-94	5
8-Oct-94	6
15-Oct-94	7
22-Oct-94	8
29-Oct-94	9
5-Nov-94	10
12-Nov-94	11

Date	Production Plan
19-Nov-94	12
26-Nov-94	13
3-Dec-94	14
10-Dec-94	15
17-Dec-94	16
24-Dec-94	17
31-Dec-94	18
7-Jan-95	19
14-Jan-95	20
21-Jan-95	21
28-Jan-95	22
4-Feb-95	23
11-Feb-95	24
18-Feb-95	25
25-Feb-95	26
4-Mar-95	27
11-Mar-95	28
18-Mar-95	29
25-Mar-95	30
1-Apr-95	31
8-Apr-95	32
15-Apr-95	33
22-Apr-95	34
29-Apr-95	35
6-May-95	36
13-May-95	37
20-May-95	38
27-May-95	39
3-Jun-95	40
10-Jun-95	41
17-Jun-95	42
24-Jun-95	43
1-Jul-95	44

Date	Production Plan
8-Jul-95	45
15-Jul-95	46
22-Jul-95	47
29-Jul-95	48
5-Aug-95	49
12-Aug-95	50
19-Aug-95	51
26-Aug-95	52
2-Sep-95	53
9-Sep-95	54
16-Sep-95	55
23-Sep-95	56
30-Sep-95	57
7-Oct-95	58
14-Oct-95	59
21-Oct-95	60
28-Oct-95	61
4-Nov-95	62
11-Nov-95	63
18-Nov-95	64
25-Nov-95	65
2-Dec-95	66
9-Dec-95	67
16-Dec-95	68
23-Dec-95	69
30-Dec-95	70
6-Jan-96	71
13-Jan-96	72
20-Jan-96	73
27-Jan-96	74
3-Feb-96	75
10-Feb-96	76
17-Feb-96	77

Date	Production Plan
24-Feb-96	78
2-Mar-96	79
9-Mar-96	80
16-Mar-96	81
23-Mar-96	82
30-Mar-96	83
6-Apr-96	84
13-Apr-96	85
20-Apr-96	86
27-Apr-96	87
4-May-96	88
11-May-96	89
18-May-96	90
25-May-96	91
1-Jun-96	92
8-Jun-96	93
15-Jun-96	94
22-Jun-96	95
29-Jun-96	96
6-Jul-96	97
13-Jul-96	98
20-Jul-96	99
27-Jul-96	100