PROSPECTS FOR ECONOMIC MANAGEMENT
1973-77

STATISTICAL APPENDIX

Cambridge Economic Policy Group

Statistical Appendix

Estimates of expenditure, output, employment, balance of payments and prices for 1960-77

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Notes and definitions

The notes and tables in this Appendix were prepared by Martin Fetherston in consultation with other members of the Cambridge Economic Policy Group. The computer analysis necessary to produce the tables was carried out by means of programs written by him. The actual computations were carried out using facilities provided by the University of Cambridge Computing Service.

Table 1 GDP, Employment and Unemployment

Year	Y	U	U'	E	E'	E*	Y*	P*
1960	32776	356	295	23774	24116	23428	30908	1 319
1961	33631	286	324	24167	24223	23559	31945	1 356
1962	33974	347	439	24257	24186	23691	33018	1.394
1963	35300	536	422	24110	24375	23823	34126	1.432
1964	37354	379	309	24475	24747	23956	35271	1 472
1965	38424	300	283	24782	24889	24090	36455	1.513
1966	39108	273	372	24949	24728	24110	37709	1 564
1967	39836	454	498	24546	24461	24130	39007	1.616
1968	41504	534	525	24392	24381	24151	40350	1.671
1969	42146	522	538	24377	24336	24171	41739	1.727
1970	42788	553	594	24299	24100	24222	42773	1.766
1971	43344	630	749	23922	23775	24274	43832	1.806
1972	44286	865	748	23633	23975	24325	44917	1.846
1973	46900	664	470	24222	24726	24377	46031	1.888
Growth rates								
1960-6	*3.2*	...	...	*0.8*	*0.6*	*0.6*	*3.4*	*2.8*
1965-9	*2.3*	...	...	*-0.4*	*-0.6*	*0.1*	*3.4*	*3.4*
1969-73	*2.7*	...	...	*-0.2*	*0.4*	*0.2*	*2.5*	*2.3*
G.D.P. growth at 2% per year						Par growth		
1974	47838	446	481	24787	24535	24224	47043	1.942
1975	48776	508	575	24341	24396	24314	48561	1.997
1976	49761	627	665	24438	24267	24404	50131	2.054
1977	50746	694	769	24137	24137	24527	51829	2.113
Growth rate								
1973-7	*2.0*	...	...	*-0.1*	*-0.6*	*0 2*	*3.0*	*2.8*
G.D.P. Growth at 1% per year								
1974	47369	446	555	24787	24352			
1975	47838	670	718	23886	24038			
1976	48307	769	881	24202	23726			
1977	48823	1002	1049	23214	23438			
Growth rate								
1973-7	*1.0*	...	...	*-1.1*	*-1.3*			

Table 2 Public Expenditure

Year	CG	IDG	IKG	IG	G
1960	7352	393	2077	2470	9822
1961	7618	411	2267	2678	10296
1962	7859	466	2306	2772	10631
1963	7984	479	2390	2869	10853
1964	8118	630	2710	3340	11458
1965	8396	663	2813	3476	11872
1966	8606	750	2972	3722	12328
1967	9097	848	3368	4216	13313
1968	9190	894	3330	4224	13414
1969	8976	890	3109	3999	12975
1970	9095	801	3298	4099	13194
1971	9430	750	3341	4091	13521
1972	9786	688	3253	3941	13727
1973	10060	725	3265	3990	14050
Growth rates					
1960-5	*2.7*	*11.0*	*6.2*	*7.1*	*3.9*
1965-9	*1.7*	*7.6*	*2.5*	*3.6*	*2.2*
1969-73	*2.9*	*-5.0*	*1.2*	*-0.1*	*2.0*
1974	10287	686	3093	3779	14066
1975	10585	587	3188	3775	14360
1976	10870	547	3240	3787	14657
1977	11168	540	3308	3848	15016
Growth rate					
1973-7	*2.6*	*-7.1*	*0.3*	*-0.9*	*1.7*

Table 3 Gross Fixed Capital Formation

Year	IG	IDP	IKP	I	Y	IDP*	IKP*	I*	Y*
1960	2470	679	2594	5743	32776	572	2383	5425	30908
1961	2678	689	3013	6380	33631	632	2575	5885	31945
1962	2772	678	2894	6344	33974	646	2684	6102	33018
1963	2869	679	2903	6451	35300	601	2796	6266	34126
1964	3340	813	3351	7504	37354	697	3057	7094	35271
1965	3476	817	3514	7807	38424	692	3078	7246	36455
1966	3722	765	3556	8043	39108	662	3278	7662	37709
1967	4216	801	3547	8564	39836	733	3412	8361	39007
1968	4224	846	3881	8951	41504	741	3771	8736	40350
1969	3999	758	4285	9042	42146	818	4116	8933	41739
1970	4099	702	4422	9223	42788	796	4459	9354	42773
1971	4091	831	4347	9269	43344	794	4424	9309	43832
1972	3941	983	4458	9382	44286	868	4603	9411	44917
1973	3990	1162	4750	9902	46900	1112	4751	9854	46031
Growth rates									
1960-5	*7.1*	*3.8*	*6.3*	*6.3*	*3.2*	*3.9*	*5.2*	*6.0*	*3.4*
1965-9	*3.6*	*-1.9*	*5.1*	*3.7*	*2.3*	*4.2*	*7.5*	*5.4*	*3.4*
1969-73	*-0.1*	*11.3*	*2.6*	*2.3*	*2.7*	*8.0*	*3.6*	*2.5*	*2.5*
GDP growth at 2% per year						Par growth			
1974	3779	899	5338	10017	47838	1011	5047	9836	47043
1975	3775	899	5380	10054	48776	983	5299	10057	48561
1976	3787	921	5544	10251	49761	1034	5612	10433	50131
1977	3848	943	5716	10507	50746	1086	5894	10828	51829
Growth rate									
1973-7	*-0.9*	*-5.1*	*4.7*	*1.5*	*2.0*	*-0.6*	*5.5*	*2.4*	*3.0*
GDP growth at 1% per year									
1974	3779	899	5301	9979	47369				
1975	3775	876	5216	9867	47838				
1976	3787	874	5296	9957	48307				
1977	3848	871	5379	10098	48823				
Growth rate									
1973-7	*-0.9*	*-7.0*	*3.2*	*0.5*	*1.0*				

Table 4 Stockbuilding

Year	S	H	H/Y	S*	H*	H*/Y*
1960	733	13150	40.1	371	12247	39.6
1961	352	13502	40.2	383	12630	39.5
1962	11	13513	39.8	395	13025	39.4
1963	197	13710	38.8	407	13432	39.4
1964	936	14646	39.2	420	13852	39.3
1965	602	15248	39.7	433	14285	39.2
1966	414	15662	40.0	459	14744	39.1
1967	338	16000	40.2	474	15217	39.0
1968	471	16471	39.7	489	15706	38.9
1969	419	16890	40.1	505	16211	38.8
1970	257	17147	40.1	365	16576	38.8
1971	-7	17140	39.5	373	16948	38.7
1972	-412	16728	37.8	381	17329	38.6
1973	880	17608	37.5	390	17720	38.5
Growth rates						
1960-5	...	*3.0*	*-0.2*	...	*3.1*	*-0.2*
1965-9	...	*2.6*	*0.2*	...	*3.2*	*-0.2*
1969-73	...	*1.0*	*-1.6*	...	*2.2*	*-0.2*
GDP growth at 2% per year				**Par growth**		
1974	786	18394	38.4	349	18069	38.4
1975	358	18752	38.4	542	18611	38.3
1976	326	19078	38.3	559	19170	38.2
1977	333	19410	38.2	605	19775	38.2
Growth rate						
1973-7	...	*2.5*	*0.5*	...	*2.8*	*-0.2*
GDP growth at 1% per year						
1974	643	18251	38.5			
1975	171	18422	38.5			
1976	124	18546	38.4			
1977	141	18686	38.3			
Growth rate						
1973-7	...	*1.5*	*0.5*			

Table 5 Balance of Payments, 1960 - 77

Year	BT[1]	PIA				GT		PT	B	Long-term Investment Overseas (net)	Trade Credit (net)	Capital Transfers	BB	Overseas currency borrowing by UK banks to finance loans to UK public sector	D	Net liquidity effect	Ditto, cumulative
		(a)	(b)	(c)	total	To EEC	Other										
1960	-407	233	-	-	233	-	-94	13	-255	-197	-47	-	-499	-	-	-499	-499
1961	-147	254	-	-	254	-	-118	17	6	62	-32	-	36	-	-	36	-463
1962	-101	334	-	-	334	-	-121	10	122	106	-64	-	164	-	-	164	-299
1963	-137	398	-	-	398	-	-132	-5	124	-150	-89	-	-115	-	20	-95	-394
1964	-602	393	-	-	393	-	-163	-10	-382	-342	-46	-	-770	-	-	-770	-1164
1965	-300	435	-	-	435	-	-177	-7	-49	-182	-46	-	-277	-	-	-277	-1441
1966	-101	387	-	-	387	-	-180	-22	84	-70	-204	-	-190	-	356	166	-1275
1967	-463	379	-	-	379	-	-188	-44	-316	-46	-180	-	-542	-	169	-373	-1648
1968	-385	335	-	-	335	-	-179	-55	-284	27	-246	-	-503	-	-196	-699	-2347
1969	172	499	-	-	499	-	-177	-49	445	-33	-172	-	240	-	85	325	-2022
1970	383	515	-	-	515	-	-172	-34	692	-82	-244	-	366	-	488	854	-1168
1971	775	516	-	-	516	-	-200	-30	1061	319	-95	-	1285	-	-293	992	-176
1972	-109	456	-	-	456	-	-189	-75	83	-173	-109	-	-199	-	769	570	394
1973	-1721	744	-	-39	705	-85	-247	-110	-1458	223	-105	-60	-1400	1000	237	-163	231
1974	-3612	885	-28	-160	697	-81	-274	-129	-3399	56	-250	-150	-3743	1300	-	-2433	-2202
1975	-2328	974	-83	-351	540	-150	-295	-149	-2382	112	-350	-	-2620	1450	-	-1170	-3372
1976	-1070	1101	-187	-537	377	-216	-325	-172	-1406	98	-400	-	-1708	1550	-	-158	-3530
1977	-210	1227	-298	-664	265	-298	-358	-202	-803	70	-450	-	-1183	1600	-	417	-3113

(1) Assuming GDP growth of 2% per year after 1973

(a) Before allowing for interest and profits on overseas investment in North Sea oil (= (b)) and interest on higher borrowing to finance deficits, 1973-77 (= (c)).

Table 6 Actual Balance of Trade, 1960-73

Year	X	M	PX	PM	TT	X'	M'	BT
1960	7014	7399	0.734	0.751	0.978	5147	5554	-407
1961	7225	7346	0.743	0.751	0.990	5368	5515	-147
1962	7345	7487	0.749	0.748	1.001	5503	5604	-101
1963	7649	7761	0.759	0.766	0.991	5809	5946	-137
1964	7951	8480	0.770	0.793	0.971	6119	6721	-602
1965	8336	8561	0.787	0.801	0.982	6561	6861	-300
1966	8679	8780	0.811	0.814	0.997	7043	7144	-101
1967	8782	9371	0.825	0.823	1.003	7245	7708	-463
1968	9807	10058	0.898	0.913	0.983	8802	9187	-385
1969	10719	10355	0.919	0.935	0.983	9850	9678	172
1970	11255	10872	1.000	1.000	1.000	11255	10872	383
1971	12057	11398	1.048	1.040	1.007	12632	11857	775
1972	12432	12556	1.072	1.070	1.002	13331	13440	-109
1973	13495	13730	1.211	1.316	0.921	16347	18068	-1721
Growth rates								
1960-5	*3.5*	*3.0*	*1.4*	*1.3*	*0.1*	*5.0*	*4.3*	...
1965-9	*6.5*	*4.9*	*3.9*	*3.9*	*0*	*10.7*	*9.0*	...
1969-73	*5.9*	*7.3*	*7.2*	*8.9*	*-1.6*	*13.5*	*16.9*	...

Table 7 Disaggregated Imports - Actual 1960-73

Year	FDT	PFDT	FU	PFU	BM	PBM	SF	PSF
1960	1969	0.782	449	1.069	1325	0.815	1376	0.730
1961	1969	0.754	468	1.030	1238	0.815	1336	0.730
1962	2047	0.766	524	1.017	1189	0.778	1340	0.713
1963	2008	0.835	557	1.002	1251	0.791	1476	0.711
1964	2047	0.865	599	0.975	1337	0.837	1761	0.752
1965	2008	0.851	655	0.930	1325	0.837	1721	0.797
1966	1969	0.869	720	0.868	1263	0.840	1783	0.830
1967	2047	0.861	772	0.944	1251	0.809	1950	0.820
1968	2106	0.902	819	1.101	1374	0.878	2266	0.935
1969	2028	0.952	879	1.032	1337	0.937	2354	0.978
1970	2047	1.000	945	1.000	1362	1.000	2500	1.000
1971	2047	1.064	1030	1.213	1239	1.027	2637	0.977
1972	2088	1.130	1030	1.208	1267	1.046	3101	0.958
1973	2103	1.476	1089	1.559	1451	1.360	3482	1.219
Growth rates								
1960-5	*0.4*	*1.7*	*7.8*	*-2.8*	*0.0*	*0.5*	*4.6*	*1.8*
1965-9	*0.2*	*2.8*	*7.6*	*2.6*	*0.2*	*2.9*	*8.1*	*5.3*
1969-73	*0.9*	*11.6*	*5.5*	*10.9*	*2.1*	*9.8*	*10.3*	*5.7*

	FM	PFM	SV	PSV	AC	PAC	M	PM
1960	674	0.767	1606	0.580	0	...	7399	0.751
1961	714	0.779	1621	0.622	0	...	7346	0.751
1962	771	0.780	1616	0.632	0	...	7487	0.748
1963	820	0.795	1649	0.619	0	...	7761	0.766
1964	1026	0.816	1708	0.635	2	1.000	8480	0.793
1965	1087	0.811	1755	0.667	10	1.200	8561	0.801
1966	1209	0.819	1803	0.686	33	1.242	8780	0.814
1967	1432	0.839	1838	0.711	81	1.210	9371	0.823
1968	1567	0.962	1826	0.790	100	1.090	10058	0.913
1969	1704	0.967	1996	0.790	57	1.070	10355	0.935
1970	2050	1.000	1958	1.000	10	1.000	10872	1.000
1971	2374	1.023	2066	1.040	5	1.000	11398	1.040
1972	2868	1.090	2197	1.097	5	1.000	12556	1.070
1973	3690	1.244	1915	1.283	0	...	13730	1.316
Growth rates								
1960-5	*10.0*	*1.1*	*1.8*	*2.8*	...	...	*3.0*	*1.3*
1965-9	*11.9*	*4.5*	*3.3*	*4.3*	...	...	*4.9*	*3.9*
1969-73	*21.3*	*6.5*	*-1.0*	*12.9*	...	...	*7.3*	*8.9*

Table 8 Trend Balance of Trade, 1960-77

Year	$\hat{X}$	$\hat{M}$	$\hat{PX}$	$\hat{PM}$	$\hat{TT}$	$\hat{X}'$	$\hat{M}'$	$\hat{BT}$
1960	6038	6959	0.545	0.524	1.040	3293	3649	-356
1961	6474	6944	0.569	0.545	1.044	3682	3784	-102
1962	6742	7251	0.605	0.590	1.025	4079	4278	-199
1963	7121	7469	0.648	0.648	1.000	4614	4840	-226
1964	7432	7936	0.685	0.690	0.993	5093	5479	-386
1965	8005	8040	0.740	0.749	0.989	5925	6018	-93
1966	8548	8392	0.799	0.796	1.004	6832	6681	151
1967	8855	9123	0.859	0.870	0.987	7606	7939	-333
1968	9502	9706	0.906	0.918	0.986	8604	8913	-309
1969	10177	10225	0.942	0.940	1.003	9588	9608	-20
1970	10731	10867	1.017	1.002	1.015	10915	10891	24
1971	12005	11585	1.064	1.067	0.998	12777	12356	421
1972	12707	12824	1.081	1.099	0.983	13735	14097	-362
1973	13392	13325	1.157	1.254	0.923	15500	16705	-1205
1974	14397	14406	1.235	1.451	0.851	17774	20900	-3126
1975	15421	15405	1.303	1.476	0.883	20095	22743	-2649
1976	16530	16574	1.375	1.513	0.909	22734	25080	-2346
1977	17642	17938	1.452	1.573	0.923	25609	28209	-2599
Growth rates								
1960-5	*5.8*	*2.9*	*6.3*	*7.4*	*-1.0*	*12.5*	*10.5*	...
1965-9	*6.2*	*6.2*	*6.2*	*5.8*	*0.3*	*12.8*	*12.4*	...
1969-73	*7.1*	*6.8*	*5.3*	*7.5*	*-2.0*	*12.8*	*14.8*	...
1973-7	*7.1*	*7.7*	*5.8*	*5.8*	*0*	*13.4*	*14.0*	...

Table 9 Par Balance of Trade, 1960-77

Year	X*	M*	PX*	PM*	TT*	X'*	M'*	BT*
1960	6709	6959	0.552	0.532	1.037	3701	3701	0
1961	6677	6944	0.586	0.563	1.040	3911	3911	0
1962	7096	7251	0.620	0.607	1.022	4401	4401	0
1963	7493	7469	0.661	0.663	0.997	4953	4953	0
1964	8016	7936	0.696	0.703	0.990	5578	5578	0
1965	8145	8040	0.748	0.758	0.987	6092	6092	0
1966	8370	8392	0.804	0.802	1.003	6728	6728	0
1967	9249	9123	0.860	0.872	0.986	7951	7951	0
1968	9832	9706	0.879	0.891	0.987	8647	8647	0
1969	10153	10225	0.927	0.920	1.007	9407	9407	0
1970	10694	10867	1.021	1.005	1.016	10919	10919	0
1971	11620	11585	1.067	1.070	0.997	12396	12396	0
1972	13103	12824	1.131	1.156	0.979	14819	14819	0
1973	14185	13325	1.214	1.330	0.913	17219	17719	-500
1974	15738	14406	1.289	1.533	0.841	20281	22081	-1800
1975	16693	15405	1.334	1.523	0.876	22265	23465	-1200
1976	17748	16574	1.398	1.545	0.905	24811	25611	-800
1977	19237	17938	1.506	1.643	0.917	28965	29465	-500
Growth rates								
1960-5	*4.0*	*2.9*	*6.3*	*7.3*	*-1.0*	*10.5*	*10.5*	...
1965-9	*5.7*	*6.2*	*5.5*	*5.0*	*0.5*	*11.5*	*11.5*	...
1969-73	*8.7*	*6.8*	*7.0*	*9.6*	*-2.4*	*16.3*	*17.2*	...
1973-7	*7.9*	*7.7*	*5.5*	*5.4*	*0.1*	*13.9*	*13.6*	...

Table 10 World Trade and Relative Costs, 1960-77

Year	W	$\hat{W}$	UC	RD	RX	RC	$\hat{RC}$	RC*
1960	38712	34850	0.704	0.889	1.179	1.049	1.109	1.040
1961	40094	38046	0.727	0.906	1.174	1.064	1.099	1.040
1962	42380	41535	0.734	0.889	1.182	1.051	1.089	1.040
1963	45427	45344	0.741	0.883	1.179	1.041	1.079	1.040
1964	50449	49502	0.770	0.903	1.176	1.061	1.070	1.040
1965	54157	54041	0.783	0.907	1.173	1.068	1.060	1.040
1966	59359	58997	0.814	0.932	1.178	1.098	1.050	1.040
1967	62813	64407	0.805	0.913	1.148	1.048	1.041	1.040
1968	70426	70314	0.866	0.959	1.009	0.967	1.031	1.100
1969	78098	76762	0.909	0.965	1.011	0.976	1.022	1.050
1970	85417	83801	1.000	1.000	1.000	1.000	1.013	1.000
1971	90532	91486	1.097	1.046	1.000	1.047	1.003	1.000
1972	97707	99876	1.181	1.080	0.959	1.036	0.994	0.900
1973	110281	109035	1.296	1.093	0.883	0.965	0.985	0.900
Growth rates								
1960-5	*7.0*	*9.2*	*2.2*	*0.4*	*0*	*0.4*	*-0.9*	*0*
1965-9	*9.6*	*9.2*	*3.8*	*1.6*	*-3.8*	*-2.2*	*-0.9*	*0.2*
1969-73	*9.0*	*9.2*	*9.3*	*3.2*	*-3.3*	*-0.3*	*-0.9*	*-3.8*
Assumed in projections (table 11)								
1974	119034	119034	1.421	1.093	0.837	0.915	0.976	0.900
1975	129950	129950	1.557	1.093	0.837	0.915	0.967	0.930
1976	141867	141867	1.706	1.093	0.837	0.915	0.959	0.930
1977	154877	154877	1.870	1.093	0.837	0.915	0.950	0.880
Growth rate								
1973-77	*8.9*	*9.2*	*9.6*	*0*	*-1.3*	*-1.3*	*-0.9*	*-0.6*

Table 11 Projected balance of trade, 1973-77

Year	X	M	PX	PM	TT	X'	M'	BT
G.D.P. growth at 3% per year								
1973	13495	13730	1.211	1.316	0.921	16347	18068	-1721
1974	14805	15058	1.360	1.601	0.849	20132	24108	-3976
1975	16118	16083	1.472	1.675	0.879	23729	26939	-3210
1976	17423	17276	1.588	1.753	0.906	27668	30286	-2618
1977	18644	18574	1.714	1.861	0.921	31955	34576	-2621
Growth rate								
1973-7	*8.4*	*7.8*	*9.1*	*9.1*	*0*	*18.2*	*17.6*	...
G.D.P. growth at 2% per year								
1973	13495	13730	1.211	1.316	0.921	16347	18068	-1721
1974	14805	14812	1.360	1.603	0.848	20132	23744	-3612
1975	16118	15524	1.472	1.678	0.877	23729	26057	-2328
1976	17423	16352	1.588	1.757	0.904	27668	28738	-1070
1977	18644	17231	1.714	1.867	0.918	31955	32165	-210
Growth rate								
1973-7	*8.4*	*5.8*	*9.1*	*9.1*	*-0.1*	*18.2*	*15.5*	...
G.D.P. growth at 1% per year								
1973	13495	13730	1.211	1.316	0.921	16347	18068	-1721
1974	14805	14571	1.360	1.605	0.847	20132	23387	-3255
1975	16118	15014	1.472	1.682	0.875	23729	25250	-1521
1976	17423	15514	1.588	1.762	0.901	27668	27330	338
1977	18644	16058	1.714	1.872	0.916	31955	30052	1903
Growth rate								
1973-7	*8.4*	*4.0*	*9.1*	*9.2*	*-0.1*	*18.2*	*13.6*	...

Table 12 Projected imports with 2% per year G.D.P. growth, 1973-77

Year	FDT	PFDT	FU	PFU	BM	PBM	SF	PSF
1973	2103	1.476	1089	1.559	1451	1.360	3482	1.219
1974	2103	1.717	1074	3.348	1414	1.522	3793	1.400
1975	2103	1.821	906	3.595	1410	1.567	4108	1.452
1976	2103	1.982	740	3.861	1405	1.611	4460	1.492
1977	2103	2.159	571	4.150	1396	1.738	4841	1.595
Growth rate								
1973-7	*0*	*10.0*	*-14.9*	*27.7*	*-1.0*	*6.3*	*8.6*	*7.0*

Year	FM	PFM	SV	PSV	M	PM
1973	3690	1.244	1915	1.283	13730	1.316
1974	4292	1.396	2134	1.445	14812	1.603
1975	4818	1.512	2179	1.610	15524	1.678
1976	5419	1.625	2225	1.794	16352	1.757
1977	6049	1.746	2271	2.000	17231	1.867
Growth rate						
1973-7	*13.2*	*8.9*	*4.4*	*11.7*	*5.8*	*9.1*

Table 13 Actual Expenditure on G.D.P.

Year	C	CG	I	S	X	M	A	R	Y
1960	25136	7352	5743	733	7014	7399	6104	301	32776
1961	25723	7618	6380	352	7225	7346	6203	-118	33631
1962	26269	7859	6344	11	7345	7487	6225	-142	33974
1963	27416	7984	6451	197	7649	7761	6482	-154	35300
1964	28274	8118	7504	936	7951	8480	6798	-151	37354
1965	28708	8396	7807	602	8336	8561	6821	-43	38424
1966	29258	8606	8043	414	8679	8780	6939	-173	39108
1967	29841	9097	8564	338	8782	9371	7130	-285	39836
1968	30556	9190	8951	471	9807	10058	7282	-131	41504
1969	30638	8976	9042	419	10719	10355	7283	-10	42146
1970	31404	9095	9223	257	11255	10872	7574	0	42788
1971	32211	9430	9269	-7	12057	11398	7894	-324	43344
1972	34115	9786	9382	-412	12432	12556	8403	-58	44286
1973	35600	10060	9902	880	13495	13730	8981	-326	46900
Growth rates									
1960-5	*2.7*	*2.7*	*6.3*	...	*3.5*	*3.0*	*2.2*	...	*3.2*
1965-9	*1.6*	*1.7*	*3.7*	...	*6.5*	*4.9*	*1.6*	...	*2.3*
1969-73	*3.8*	*2.9*	*2.3*	...	*5.9*	*7.3*	*5.4*	...	*2.7*
G.D.P. Growth at 2% per year									
1974	36015	10287	10017	786	14805	14812	9018	-243	47838
1975	36693	10585	10054	358	16118	15524	9248	-260	48776
1976	36801	10870	10251	326	17423	16352	9281	-277	49761
1977	36956	11168	10507	333	18644	17231	9336	-294	50746
Growth rate									
1973-7	*0.9*	*2.6*	*1.5*	...	*8.4*	*5.8*	*1.0*	...	*2.0*
G.D.P. Growth at 1% per year									
1974	35277	10287	9979	643	14805	14571	8808	-243	47369
1975	35181	10585	9867	171	16118	15014	8809	-260	47838
1976	34266	10870	9957	124	17423	15514	8542	-277	48307
1977	33438	11168	10098	141	18644	16058	8315	-294	48823
Growth rate									
1973-7	*-1.6*	*2.6*	*0.5*	...	*8.4*	*4.0*	*-1.9*	...	*1.0*

Table 14 Par Expenditure on GDP, 1960-77

Year	C*	CG	I*	S*	X*	M*	A*	R	Y*
1960	23052	7352	5425	371	6709	6959	5342	301	30908
1961	24090	7618	5885	383	6677	6944	5646	-118	31945
1962	24781	7859	6102	395	7096	7251	5822	-142	33018
1963	25640	7984	6266	407	7493	7469	6041	-154	34126
1964	25773	8118	7094	420	8016	7936	6063	-151	35271
1965	26569	8396	7246	433	8145	8040	6252	-43	36455
1966	27772	8606	7662	459	8370	8392	6595	-173	37709
1967	27850	9097	8361	474	9249	9123	6615	-285	39007
1968	28808	9190	8736	489	9832	9706	6868	-131	40350
1969	30854	8976	8933	505	10153	10225	7446	-10	41739
1970	31912	9095	9354	365	10694	10867	7780	0	42773
1971	33197	9430	9309	373	11620	11585	8188	-324	43832
1972	33336	9786	9411	381	13103	12824	8219	-58	44917
1973	33437	10060	9854	390	14185	13325	8244	-326	46031
1974	33854	10287	9836	349	15738	14406	8374	-243	47043
1975	35072	10585	10057	542	16693	15405	8723	-260	48561
1976	36545	10870	10433	559	17748	16574	9174	-277	50131
1977	37763	11168	10828	605	19237	17938	9541	-294	51829
Growth rates									
1960-5	*2.9*	*2.7*	*6.0*	...	*4.0*	*2.9*	*3.2*	...	*3.4*
1965-9	*3.8*	*1.7*	*5.4*	...	*5.7*	*6.2*	*4.5*	...	*3.4*
1969-73	*2.0*	*2.9*	*2.5*	...	*8.7*	*6.8*	*2.6*	...	*2.5*
1973-7	*3.1*	*2.6*	*2.4*	...	*7.9*	*7.7*	*3.7*	...	*3.0*

Table 15 Retail Prices

Year	RPI	TC	WC	PGM	RPI*	TC*	WC*	PGM*
1960	67.2	52.7	72.9	79.5	54.0	54.7	58.0	61.8
1961	70.0	55.0	76.2	78.1	56.9	57.6	61.6	65.0
1962	72.5	57.3	77.8	77.8	61.7	60.6	65.5	68.4
1963	73.9	55.9	79.1	81.1	65.6	63.8	69.5	72.0
1964	76.3	60.2	81.0	83.8	69.7	67.2	73.9	75.8
1965	80.0	66.8	83.7	83.8	75.1	70.8	78.5	79.7
1966	83.1	73.1	86.9	84.9	80.1	74.5	83.3	83.9
1967	85.2	76.3	87.1	84.8	85.7	78.5	88.5	88.3
1968	89.2	84.6	89.8	93.3	91.2	82.6	94.0	92.9
1969	94.0	95.3	91.5	96.6	97.4	87.0	99.9	97.8
1970	100.0	100.0	100.0	100.0	103.9	91.6	106.1	102.9
1971	109.4	99.7	113.3	104.4	111.2	96.5	112.7	108.2
1972	117.2	96.5	124.4	107.3	117.6	101.6	119.7	113.9
1973	128.2	98.7	134.9	133.8	123.3	106.9	127.2	119.9
Growth rates								
1960-5	*3.5*	*4.8*	*2.8*	*1.1*	*6.8*	*5.3*	*6.2*	*5.2*
1965-9	*4.1*	*9.3*	*2.3*	*3.6*	*6.7*	*5.3*	*6.2*	*5.2*
1969-73	*8.1*	*0.9*	*10.2*	*8.5*	*6.1*	*5.3*	*6.2*	*5.2*
GDP growth at 2% per year								
1974	146.8	113.0	147.9	163.9	131.3	112.6	135.1	126.1
1975	162.1	124.8	162.1	170.3	139.8	118.6	143.5	132.7
1976	175.2	134.9	177.6	177.4	148.9	124.9	152.4	139.7
1977	190.2	146.4	194.7	187.5	158.6	131.5	161.9	147.0
Growth rate								
1973-7	*10.4*	*10.4*	*9.6*	*8.8*	*6.5*	*5.3*	*6.2*	*5.2*

Table 16 Real National Income and Consumption

indices, 1970 actual = 100

Year	Actual		Par	
	RNI	C	RNI	C
1965	89.5	91.4	85.1	84.6
1966	91.2	93.2	88.3	88.4
1967	92.9	95.0	90.9	88.7
1968	96.1	97.3	94.0	91.7
1969	98.0	97.6	97.6	98.2
1970	100.0	100.0	100.2	101.6
1971	101.3	102.6	102.1	105.7
1972	103.2	108.6	104.1	106.2
1973	106.7	113.4	104.4	106.5
Growth rates				
1965-9	*2.3*	*1.6*	*3.4*	*3.7*
1969-73	*2.1*	*3.8*	*1.7*	*2.0*

Projected	G.D.P. growth at						Par	
	1%		2%		3%			
	RNI	C	RNI	C	RNI	C	RNI	C
1974	104.6	112.3	105.6	114.7	106.7	117.1	103.4	107.8
1975	106.4	112.0	108.4	116.8	110.7	122.0	107.9	111.7
1976	108.0	109.1	111.1	117.2	114.7	125.9	112.3	116.4
1977	109.2	106.5	113.5	117.7	118.2	130.2	116.2	120.2
Growth rate								
1973-7	*0.6*	*-1.6*	*1.5*	*0.9*	*2.6*	*3.4*	*2.7*	*3.0*

Notes and definitions

Introduction

The following sections describe in detail the methods used to construct Tables 1-16. The figures in the tables excluding Tables 5 and 16 are calculated by means of a set of computer programs which are designed to produce a mutually consistent set of tables for any given set of relevant assumptions about the future. The general method involves the following three stages:

1) Construction of the par economy for the past, i.e. the economy as it could have been if demand had been continually adjusted so as to maintain a constant rate of unemployment, and if UK producers had been sufficiently competitive in foreign trade to ensure that specified balance of payments targets were being met. This is achieved by the application of a precise set of rules (described below) to actual past data. Where possible published data is used for this purpose: estimates based on latest available information are used for 1973 data as yet unavailable.

2) Projection of the par economy for the future on the basis of certain precise assumptions about underlying trends in the development of the economy.

3) Projections of the actual economy using, in reverse, the same rules as in 1). Alternative projections shown in the tables are based on alternative assumptions about future G.D.P. - 1% and 2% growth in general, with, in addition, 3% growth for projection of the balance of trade in Table 11. Additional alternative projections can also be produced by varying the assumptions made about world trade and relative costs in Table 10: the assumptions made for the trade projections are described further under Tables 6-12. Steps 1) and 2) construct a picture of underlying trends in the development of the economy, and are thus invariant to the choice of projections made under 3).

In the definitions which follow, all expenditure items are in £million at 1970 prices except where otherwise specified. The growth rates shown in the tables are average compound growth rates per annum.

Table 1 GDP, Employment and Unemployment

The relationships used for this table analyse past movements in GDP, employment, unemployment and productivity in order to construct par series for those variables, i.e. how they might have behaved if a constant pressure of demand (defined as a 2½% rate of unemployment) had been maintained throughout. Then the par economy for the future is constructed by projecting par employment and par productivity, and the same framework of relationships used to investigate the consequences for the actual economy of any given pattern of growth of future actual GDP.

Definitions:

Y	GDP (£ million) at 1970 factor cost: compromise index linked to 1970 expenditure estimate
U	Unemployment: arithmetic mean of first quarter seasonally adjusted monthly figures (excluding school-leavers and adult students) (thousands)
E	Employment: employees in employment plus HM forces plus employers and self-employed (self-employed based on 1971 Census of Population); seasonally adjusted March figure on Census of Employment basis.[1,2] (thousands)

Actual employment and unemployment, E and U, are then adjusted for their lagged response to changes in output to obtain equilibrium employment and unemployment, E' and U', which, at a particular pressure of demand, are the levels of actual employment and unemployment which could be sustained if that demand pressure persisted, with a given labour force. U' is thus a direct measure of the current pressure of demand. The speed with which U and E adjust to U' and E' respectively depends on the rate of growth of output: the faster the rate of growth, the slower the rate of adjustment.

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1 Earlier figures on National Insurance Card count basis are converted to the new series at June 1971 (the first Census of Employment estimate).

2 There is some doubt about the validity of the erratic movements in quarterly female employment (DE Gazette May 73, p. 459); we have interpolated the quarterly movements to revise estimates of female employment in 1971 I (+70,000) and 1972 I (-120,000).

Thus we have next year's actual unemployment as a weighted sum of this year's actual and equilibrium unemployment (and similarly for employment):

$$U_{t+1} = \frac{1}{\lambda_t} U'_t + (1 - \frac{1}{\lambda_t}) U_t \qquad 1.1$$

$$E_{t+1} = \frac{1}{\lambda_t} E'_t + (1 - \frac{1}{\lambda_t}) E_t \qquad 1.2$$

For the past we can thus infer U' and E':

$$U'_t = \lambda_t U_{t+1} + (1 - \lambda_t) U_t \qquad 1.3$$

$$E'_t = \lambda_t E_{t+1} + (1 - \lambda_t) E_t \qquad 1.4$$

The speed of adjustment is given by

$$\lambda_t = 0.4 + 8.3333 \left(\frac{Y_t - Y_{t-1}}{Y_{t-1}} \right) \qquad 1.5$$

so that λ varies from 0.4 with zero growth to 0.9 with 6% growth.

Par series for GDP, unemployment, employment and productivity, i.e. Y^*, U^*, E^* and P^*, are then obtained from relationships between their respective deviations from par:

$$\frac{E'}{E^*} = \left(\frac{Y}{Y^*} \right)^{\beta_e} \qquad 1.6$$

$$U' - U^* = 0.4(E^* - E') \qquad 1.7$$

$$U^* = 0.025\ E^* \qquad 1.8$$

where β_e increases smoothly from 0.52 in 1960 to 0.76 in 1972, and is assumed to remain constant thereafter, implying increased responsiveness of employment, and thus also unemployment, to fluctuations in GDP.

Par productivity (£ thousand, 1970 prices) is defined by

$$P^* = Y^*/E^* \qquad 1.9$$

1.3 to 1.9 are solved to obtain values of E^* for 1961, 1965, 1969 and 1972, and of P^* for 1961, 1965, 1969 and 1973. Other past values are obtained by interpolation or extrapolation. E^* is extrapolated to 1977 taking account of demographic changes, etc., and P^* is projected on the basis of

a study of productivity trends in the manufacturing and non-manufacturing sectors. 1.9 is then used to obtain a series for Y^* for the entire period 1960-77. For any one of the alternative projections of actual GDP, 1.3 to 1.8 are solved to give future equilibrium and actual employment and unemployment.

Table 2 Public Expenditure

Definitions:

CG	Public authorities' current expenditure on goods and services
IDG	Public sector gross fixed capital formation in dwellings
IKG	Other public sector gross fixed capital formation
IG	Total public sector gross fixed capital formation IG = IDG + IKG
G	Total public sector expenditure on goods and services (excluding public corporations' current expenditure) G = IG + CG

The volume of resources absorbed by the public sector in the categories defined above is assumed to be the same under par as under actual conditions, and also under any of the alternative projections of the future pressure of demand. Thus no adjustments for pressure of demand, etc., are made to the public expenditure series. Projections for 1974 onwards are based on estimates in the White Paper "Public Expenditure to 1977/78" adjusted to take account of the estimated effects of the cuts announced by the Chancellor on December 17th, 1973.

Table 3 Gross Fixed Capital Formation

Using the estimates of par GDP obtained in Table 1, par series for various components of capital formation are constructed and projected : given these par projections, actual series are then projected to correspond with the alternative projections of GDP shown in Table 1.

Definitions:

IDP	Private gross fixed capital formation in dwellings
IKP	Other private gross fixed capital formation
IG	Public sector gross fixed capital formation (see Table 2)
I	Total public and private gross fixed capital formation I = IDP + IKP + IG

Par series for past years are calculated by :

$$IDP^* = IDP + 0.05\ (Y^* - Y)_{-1} - MN \qquad 3.1$$

$$IKP^* = IKP + 0.08\ (Y^* - Y) + 0.19\ (Y^* - Y)_{-1} - 0.1\ (Y^* - Y)_{-2} \qquad 3.2$$

Since values of Y* prior to 1960 have not been constructed, IDP* in 1960 and IKP* for 1960 and 1961 are obtained by extrapolating backwards a geometric trend fitted to the par series given by 3.1 and 3.2. MN is an adjustment term to account for the effects on private housebuilding of abnormal financial conditions in the housing market, and is given by the equation:

$$MN = 0.29\ (NI - NI^*)_{-1} - 74.6\ (MIR - MIR^*) \qquad 3.3$$

where

NI = annual net inflow of funds to building societies (1970 prices)

MIR = current borrowing rate on new mortgages

NI* = "par" net inflow, i.e. that inflow received by the building societies when the ratio of their deposit rate to Bank rate/Minimum Lending Rate is equal to unity

MIR* = trend value of MIR

The presence in the par series, as well as the actual, of the 1973 housebuilding boom and the fall in non-dwelling fixed investment in 1971 indicate that these events cannot be fully explained by movements of actual GDP or, in the case of housebuilding, by unusually favourable financial conditions.

Assuming that 1973 housebuilding contains an unexplained abnormal positive component of some £200 million, future par housebuilding is pro-

jected on the basis that £70 million of this abnormality persists into 1974, but none thereafter. This adjustment is superimposed on an underlying par series which accelerates from a growth rate of 3.2% in 1974 to 5% by the end of the period. Future (actual) IDP is then obtained from 3.1 with the aid of a projection for MN, as shown below.

	MN
(1973)	+81
1974	-155
1975	-124
1976	-124
1977	-124

For projections of IKP* and IKP, private investment in the steel industry and further investment in North Sea oil and gas (over and above the 1973 rate) are treated as exogenous: private steel investment (PS) is assumed to remain at its 1973 level of £45 million, whilst additional North Sea investment (NS) at 1970 prices is assumed to rise from £50 million in 1974 to £100 million per annum for 1975-77 inclusive. IKP* is then projected directly by the equation:

$$IKP^* = -3066 + 0.08Y^* + 0.19Y^*_{-1} - 0.1Y^*_{-2} + PS + NS \qquad 3.4$$

Projected IKP is then obtained from IKP* using 3.2.

Table 4 Stockbuilding

The task of constructing a satisfactory par series for stockbuilding proved to be a difficult one: the approach finally adopted was based on an estimated relationship between stock levels and lagged GDP.

Definitions:

S value of physical increase in stocks and work in progress

H end-year value of stocks and work in progress

$H = H_{-1} + S$

The estimated equation for stock levels was:

$$H = 0.3045Y + 0.0951Y_{-1} \qquad 4.1$$

Taking deviations from par we then have

$$H^* = H + 0.3045\ (Y^*-Y) + 0.0951\ (Y^*-Y)_{-1} \qquad 4.2$$

Since $S = H-H_{-1}$, it follows that

$$S^* = S + 0.3045\ (Y^*-Y) - 0.2094\ (Y^*-Y)_{-1} - 0.0951\ (Y^*-Y)_{-2} \qquad 4.3$$

The resultant series for 1962-73 inclusive was not entirely satisfactory, however, so a further adjustment was made. A smooth trend was fitted through the par stock-output ratio series implied by 4.2 and extrapolated backwards to 1960 and forward to 1977; this trend series was used to obtain a new series for par stocks, from which par stockbuilding is inferred by taking first differences. 4.2 is then used to obtain future actual stock levels, and thus actual stockbuilding, conditional on the projection of actual GDP.

A major reason for the difficulties posed for the analysis of stockbuilding is the sharp decline in the stock-output ratio since 1970 as a consequence of negative stockbuilding in 1971 and 1972. Some recovery at least of the stock-output ratio from its historically low 1973 level seems probable, and it was considered unacceptable that, due to this influence of recent years, the par stock-output ratio should show further rapid decline in the future. As it is, the par stock-output ratio obtained by the method described above shows only slow trend decline, and this is reflected in a recovery of the projected actual stock-output ratio in 1974 to over 38%, with only slow decline thereafter.

Table 5 Balance of Payments

This table shows the main components of the balance of payments for the entire period under review, with estimates of the impact on the U.K.'s net liquidity position. All items are at current prices. Figures for 1960-73 were derived from the official balance of payments statistics except that those for 1973 were estimated with the help of three quarters' published figures. Figures for 1974-77 are projections which show the implications for the balance of payments of G.D.P. growth of 2% per year after 1973.

Definitions

BT Balance of trade in goods and services

PIA Property income from abroad, net.

Interest, profits and dividends earned overseas, net of overseas tax, minus payments overseas, net of U.K. tax.

(a) Before allowing for (b) and (c) below.

(b) Interest and profits on overseas investment in North Sea oil. Includes payments on the direct capital stake of foreign oil companies and on long-term foreign borrowing by British companies to finance oil exploration and development in the U.K. sector of the North Sea. Also includes an allowance for the reduction in earnings of U.K. oil companies attributable to reductions in U.K. imports of oil.

(c) Interest on higher borrowing needed to finance deficits in the period 1973-76, starting with interest on Eurocurrency borrowing for that purpose in 1973. Deficits are those shown under 'basic balance' (BB, defined below).

GT Government current transfers abroad, net.

PT Private transfers abroad, net.

B Current balance of payments.

Long-term investment overseas, net

Inflows of direct, portfolio, "oil and miscellaneous", and official long-term investment from overseas, minus outflows. Foreign currency borrowing by U.K. banks to finance investment overseas is counted as long-term inward investment.

Official long-term investment (net) includes U.K. capital subscriptions to the European Investment Bank and the E.C.S.C., transactions involving the U.S. Export-Import Bank credit for purchase of U.S. military aircraft, U.K. subscriptions to the I.D.A. and other development agencies, and repayment of long-term U.S. and Canadian Government credits.

Trade credit, net

Import credit received from unrelated firms, minus export credit granted. Values for 1960-62 are estimated on the basis of changes in imports and exports, assuming constant credit/trade ratios.

Capital Transfers

Payment under the guarantee clauses of the Sterling Agreements.

BB Basic balance of payments

B + long-term investment overseas, net + trade credit, net + capital transfers.

Overseas currency borrowing by U.K. banks to finance loans to the U.K. public sector.

Borrowing under the exchange cover scheme announced in March 1973. In this table such borrowing is counted as a special financing item that, considered on its own, improves the U.K.'s net liquidity position (see 'net liquidity effect' below).

D Allocations of I.M.F. drawing rights, special and ordinary (net of gold contributions to the I.M.F.), E.E.A. profits/losses and revaluations affecting the reserves and short-term assets and liabilities, so far as these are identified in the official Balance of Paymen ts accounts. (See U.K. Balance of Payments, 1973, Table 41, and earlier editions). In this exercise, the official reserves since 1971 were valued at market exchange rates, not at the official parity rate.

Net liquidity effect

Changes in the balance of official reserves (including special I.M.F. drawing rights and unused lines of credit at the I.M.F.) minus net short-term external liabilities in official and private hands. Identically equal to BB + D + overseas currency borrowing by U.K. banks to finance U.K. public sector loans. A minus sign indicates a deterioration in the net liquidity position.

Projections for 1974-77

BT See Table 11 of this appendix.

In the case of most other items, the procedure was to project past flows in real terms, using a variety of methods. Items wholly or largely fixed in overseas currency terms, such as property income from abroad or the U.K.'s contribution to the E.E.C. budget, were expressed in real terms by deflating sterling values at current prices by the price deflator for U.K. imports of goods and services. Items wholly or largely fixed in sterling terms, such as profits and interest on inward investment, together with inward investment itself (a large part of which is financed from retained profits earned in the U.K.), were dealt with by deflating current values by the G.D.P. deflator. Projections in real terms were then expressed at current prices assuming an average rate of inflation of sterling values of slightly under 6 per cent per year, 1973-77, for all items.

PIA (a) The principal components of interest, profits and dividends were projected separately on the basis of logarithmic trends in their real values since 1960.

(b) The estimates of interest and profits payable on foreign investment in North Sea oil were based on a special study of North Sea oil prospects. Among the assumptions which are critical to the results are the following: output of oil from the U.K. sector of the North Sea will be some 15 million tons in 1975, rising to 60 mn. tons in 1977; some 75 per cent of all net investment in the U.K. sector is and will continue to be financed directly or indirectly from abroad; gross investment in the U.K. sector will be running at nearly £500 million p.a. by 1975 and will decline slowly thereafter; interest on the foreign share of the accumulated net investment will be payable at about 8%; oil company profits after depreciation, interest and U.K. tax will be limited by Government policy to some £4 per ton, rising to £5 per ton by 1977.

(c) Interest on higher short-term borrowing was calculated at the rate of about 8 per cent on accumulated net borrowing to finance deficits implied by G.D.P. growth at 2% p.a. - some £8,500 million by end-1977, not counting drawings on the official reserves of £1,800 (all of which was assumed to occur in 1974). 8 per cent is midway between the likely rate on official borrowing, 5 per cent, and that on Euro-currency borrowing, 11 per cent or more.

It was also calculated that interest payments on deficits implied by G.D.P. growth at 3 per cent per year would amount to approximately £750 million by 1977, while those implied by G.D.P. growth at 1 per cent p.a. would be approximately £400 million by 1977.

GT Projected on the basis of estimates in the Public Expenditure White Paper (Cmnd. 5178), as was the U.K. contribution to the E.E.C. budget.

Long-term investment overseas

Direct investment (excluding associated foreign currency borrowing) was projected on the basis of logarithmic trends in real flows since 1960. Separate projections were made for investment in E.E.C. and non-E.E.C. areas and adjustments were made to reflect relaxation of restrictions to the E.E.C. after 1974.

Outward oil and miscellaneous investment was projected on the basis of the slight downward trend in this item, measured in real terms. It should be noted that, unlike the series for direct investment, the published series for oil etc. is shown net of associated external borrowing by U.K. parent companies.

Overseas currency borrowing to finance direct investment overseas, whether directly by U.K. parent companies or via U.K. banks, was projected to grow slightly faster than direct investment overseas. Overseas investment in the U.K. public sector was made to grow more rapidly than in the past in reflection of the new exchange cover arrangements. Other items of inward investment were projected in line with past trends.

The net of outward portfolio investment and associated foreign currency borrowing was put at zero.

The main components of official long-term investment were projected with the help of the Public Expenditure White Paper and recent Treasury Press Releases.

Trade Credit

The basic method for projecting expansion of import credit was briefly as follows:

$$\Delta T_{M_t} = .055\ (\Delta M)_t$$

$$\Delta T_{X_t} = .210\ (\Delta X)_t$$

where T_{M_t} and T_{X_t} are respectively, total import and export credit outstanding at the end of year t ($\Delta T_{M_t} = T_{M_t} - T_{M_{t-1}}$), M and X are imports and exports of goods and services, $(\frac{T_M}{M})$ 1973 = .055, and $(\frac{T_X}{X})$ 1973 = .209, all items at current prices.

However, since this method gave rise to unreasonably large increases in net export credit (assuming exports and imports implied by G.D.P. growth of 2 per cent p.a.), the import credit ratio $\frac{T_{Mt}}{Mt}$ was allowed to increase to 0.70 by 1977 (thus regaining its 1972 level), while $\frac{T_{X_t}}{X_t}$ was made to to fall further to 0.20 in 1974 from its 1972 level of 0.24, subsequently regaining its 1973 level by 1977.

The results were finally reduced by about £100 million per year to remove net export credit between related firms (part of direct investment overseas).

Tables 6-12 The Balance of Trade on Goods and Services

For the preceding tables 1-4 a sufficient definition of par consists of specifying a constant rate of unemployment. However, the par economy is further defined by the condition that the U.K.'s competitiveness in world trade is sufficient to ensure that specified balance of payments targets are being met. The preliminary stage in the construction of par is to analyse trends in the balance of trade by correcting the actual trade balance for deviations from trend; since in general the trend balance of trade does not fulfil the par targets, the next stage is to estimate what additional adjustments to trend competitiveness would have been and would be necessary in order that those targets should be met.

The aim of the analysis of the balance of trade can thus be summarised as follows:

1) To estimate the trend balance of trade, i.e. the course the balance of trade and its various components might have followed at par demand pressure and if world trade, U.K. domestic inflation and U.K. relative costs had all followed their respective trend paths.

2) To extrapolate the trend balance of trade and then use this extrapolation to project the actual balance of trade to correspond to alternative projections of demand and exchange rate policy.

3) Given a set of par targets for the balance of trade, to estimate what levels of U.K. competitiveness would have been, and would be, necessary to achieve those targets. The net resource requirement of a satisfactory balance of payments position is then implied by the trade target and the terms of trade required to achieve that target.

Table 6 and 7 show actual past series for the balance of trade:

X	Exports of goods and services at 1970 prices
M	Imports of goods and services at 1970 prices
X'	Exports of goods and services at current prices
M'	Imports of goods and services at current prices
PX	Price deflator for exports PX = X'/X
PM	Price deflator for imports PM = M'/M
TT	Terms of trade TT = PX/PM
BT	Balance of trade on goods and services at current prices BT = X' - M'

Table 7 shows volume series and deflators resulting from the disaggregation of total imports into seven categories:

FDT	Food, drink and tobacco
FU	Fuels
BM	Basic materials
SF	Semifinished manufactures
FM	Finished manufactures
AC	U.S. aircraft
SV	Other (mainly services)

Corresponding deflators are shown with prefix P.

The trend balance of trade for the past (Table 9) is obtained by adjusting export and import volumes and deflators for deviations from trend in GDP, world trade and relative costs (Table 10):

W	World trade: the sum of the exports of goods and services at 1970 sterling values (£ million) of the U.K. and six major exporters - Canada, France, West Germany, Italy, Japan, U.S.A.
UC	U.K. unit labour costs in manufacturing (average hourly earnings divided by trend productivity) including adjustments in 1965 onwards for the effects of export rebates, S.E.T. premiums and the Regional Employment Premium
RD	U.K. relative costs in domestic currencies, i.e. UC relative to a geometric index of the unit costs (expressed in their own currencies) of the other six countries named above, using weights obtained from 1970 shares of each country in W.
RX	U.K. exchange rate (pounds per U.S. dollar, 1970 = 1) relative to a geometric index (constructed similarly to RD, using the same weights) of the exchange rates of the other six countries.
RC	U.K. relative costs corrected for exchange rate changes
Y	GDP (Table 1)

The equivalent series for the trend balance of trade are:

$\hat{W}$		trend world trade
$\hat{UC}$	(not shown)	trend unit costs
$\hat{RC}$		trend relative costs
Y*		par GDP

The indices UC, RD, RX, RC are all expressed to base 1970 = 1.

Except where otherwise specified, all trend series in the trade analysis are the result of fitting logarithmic trends to actual data for the period 1965-73, and extrapolating forward and back where required. There is a marked acceleration in the rate of growth of trade volumes and costs after the mid-sixties, and it is this accelerated trend which is relevant for the analysis of present trends in the balance of trade.

The rules according to which the various adjustments are made are described below:

1) Export volumes are adjusted for cost differences (subject to a geometric lag) and for world trade:

$$\frac{\hat{X}}{\hat{W} - \hat{X}} = \frac{X}{W - X} \left[\prod_{u = 1960}^{t} \left(\frac{\hat{RC}}{RC} \right)^{0.75^{t-u}} \right]^{-0.475} \cdot \left(\frac{\hat{W}}{W} \right)^{-0.5} \qquad 6.1$$

Because of the improvement in relative costs after 1965, and the effect of extrapolation of the trend series to 1960, trend relative costs in 1960 are 5% higher than actual relative costs. However, we assume that there are no differences between trend and actual costs prior to 1960. Trend exports in the early 1960's are thus higher than if the pattern of cost differences were extrapolated back beyond 1960.

2) The volumes of imports of fuels, basic materials and semifinished manufactures are adjusted in accordance with their respective marginal import contents of GDP:

$$\hat{FU} = FU + 0.02\ (Y^* - Y) \qquad 6.2$$

$$\hat{BM} = BM + 0.04\ (Y^* - Y) \qquad 6.3$$

$$\hat{SF} = SF + 0.1\ (Y^* - Y) \qquad 6.4$$

Finished manufactures are adjusted by;

$$\hat{FM} = FM \left(\frac{Y^*}{Y} \right)^{4.0} \qquad 6.5$$

No adjustments for variations in GDP were made in the other three import categories - food, drink and tobacco, services and U.S. aircraft.

3) The deflators for exports and imports (excluding U.S. aircraft) are adjusted for domestic inflation, relative costs and world trade:

$$\hat{P}_i = P_i \left[\frac{\hat{UC}}{UC} \left(\frac{\hat{RC}}{RC} \right)^{\alpha_2} \right]^{\alpha_1} \left[\frac{\hat{UC}_{-1}}{UC_{-1}} \left(\frac{\hat{RC}_{-1}}{RC_{-1}} \right)^{\alpha_2} \right]^{(1-\alpha_1)} \left(\frac{\hat{W}}{W} \right)^{\alpha_3} \qquad 6.6$$

The coefficients used in 6.6 are:

	α_1	α_2	α_3
PX	0.87	-0.52	0
PFDT	0.5	-0.65	1.5
PFU	1.0	-1.0	0
PBM	1.0	-0.47	1.5
PSF	0.76	-0.63	1.04
PFM	0.8	-0.80	0
PSV	1.0	-0.23	0

1960 values for the trend deflators are obtained by backward extrapolation of trends fitted through the series given by 6.6 for the years 1961-73.

The next stage is the extrapolation of the various components of the trend balance of trade as obtained above in order to show expected future movements of the underlying trade position and to provide a base for projections of the actual trade balance. Projected Y* is as in table 1: $\hat{W}$, $\hat{UC}$ and $\hat{RC}$ for 1974-77 are extrapolations of their fitted trends. The aim of the adjustments made in 6.1 to 6.6 above is to extract smooth trend series for exports, the various categories of imports, and their deflators. Lack of smoothness in these series implies the presence of factors which are not accounted for by the adjustments used; examples of this are the elements of "bad luck" described in Chapter 7, such as the sharp upward movements in fuel and commodity prices in 1973. Where possible the trend series for imports and exports are projected by extrapolating on a smooth trend, with the following exceptions to take account of recent abnormalities and other known factors:

<u>Food, drink and tobacco</u> The volume of imports is projected to remain at the 1973 level to take account of increased domestic food production due to E.E.C. membership. By the fourth quarter of 1973, the deflator implied by 6.6 is estimated to be 20% above its smooth trend value. Half of this discrepancy is assumed to disappear by 1975, but the remainder to persist thereafter.

Fuels Trend imports are projected to decline by 1977 to 55% of the 1973 level with increased substitution of domestic energy sources for imports of oil. The price of fuel imports is assumed to double between 1973 and 1974, and to increase at 5½% per annum thereafter.

Basic materials and semifinished manufactures By the fourth quarter of 1973 the adjusted deflators are estimated to be 16% and 12½% respectively above trend, due to the boom in world commodity prices. These off-trend elements are projected to vanish by 1976 on the assumption that the peak of the boom in commodity prices has already been reached. The series for semifinished and finished manufactures are adjusted before fitting the trend for extrapolation to take account of the effect of the 1964 import surcharge in reducing and postponing imports in 1965-67.

The trend projections described above are the basis of the summary projection of the trend balance of trade shown in Table 8. Table 11 shows projections of the actual trade balance on three alternative assumptions about future GDP, and Table 12 the details of disaggregated imports for the 2% growth projection. These projections are obtained by using 6.1 to 6.6 to adjust the trend projections for the assumptions made about GDP and the variables shown in Table 10. Thus world trade is assumed to return to its trend path in 1974, whilst U.K. unit costs increase at 9.6% per annum. RD is assumed to remain unchanged from 1973 and RX to remain at the level reached in mid-December 1973, equivalent to a 17½% devaluation since December 1971. Further alternative projections are feasible on the basis of different assumptions for these variables, in addition to those obtained by varying the projected growth of GDP.

Table 9 shows the components of the par balance of trade: this is obtained from the trend balance by choosing a series for par competitiveness, RC* (see Table 10), to replace $\hat{RC}$ such that the corresponding adjustments made in 6.1 and 6.6 yield approximately the target balance BT*. Keeping the resulting par terms of trade constant, export volumes are then adjusted to yield the exact balance:

$$X^* = (BT^* + PM^* \cdot M^*)/PX^* \qquad 6.7$$

Tables 13, 14 Expenditure on GDP

These tables summarise the resource implications of the analysis and projections described in preceding tables, in particular the implications for consumption. For the par economy and for projections of the actual economy, consumption is inferred as a residual from GDP and the other expenditure items.

C Consumers' expenditure

A Adjustment to factor cost

R Residual error: compromise less expenditure estimate

Hence

$$R = Y + A - C - CG - I - S - X + M \qquad 13.1$$

For the projections in Table 13, future R is given by extrapolating a linear trend fitted to past values. A is decomposed into net indirect taxes attributed to categories of expenditure, and the factor cost adjustment allocated to consumption as a proportion of consumers' expenditure at market prices (not shown in the tables) is obtained from

$$AC = (A - 0.0689\ CG - 0.0793\ I - 0.0398\ X)/C \qquad 13.2$$

where the coefficients on CG, I and X are the corresponding ratios for those expenditure items in 1970. AC varies with the ratio of consumption to GDP, and is projected by the equation:

$$AC = 0.0121 + 0.2234\ \frac{C}{Y} + 0.0008_t \quad (1960:\ t = 1) \qquad 13.3$$

Projections of future actual consumption as a residual are then obtained by solving 13.1 to 13.3 for C, AC and A. These projections, shown in Table 13, show what consumption would have to be if each projection taken as a whole is to be internally consistent: fiscal policy is implicitly assumed to ensure that the required level of consumption is in fact generated.

The par economy is assumed to have the same residual error as the actual economy: 13.1 to 13.3 are then solved again using par series for expenditure and output to obtain C* and A* as shown in Table 14. Again consumption is interpreted as a residual: C* shows the resources available for private consumption under par conditions.

Table 15 Retail Prices.

This table provides a projection of the Retail Price Index on an annual basis corresponding to assumptions about future movements in domestic costs and import prices. The general method again involves working with deviations from par.

RPI All items Retail Price Index

TC Net revenue from taxes on consumption as a proportion of consumers' expenditure at 1970 prices.

WC Unit wage costs: basic hourly rates + employers' contributions per head in manufacturing (excluding engineering) divided by trend productivity

PGM Import prices: price deflator for imports of goods and services (see Table 6) recalculated excluding services and US aircraft and increasing the weight given to food, drink and tobacco by 70% to incorporate the assumption that domestic food prices move with the prices of imported food.

All the above are expressed as indices to base 1970 = 100. The par retail price index is given by

$$RPI^* = RPI + 0.1\ (TC^* - TC) + 0.38\ (WC^* - WC) + 0.20\ (WC^*_{-1} - WC_{-1}) + 0.19\ (PGM^* - PGM) + 0.13\ (PGM^*_{-1} - PGM_{-1}) \qquad 15.1$$

TC*, WC* and PGM* are obtained by fitting logarithmic trends to the period 1965-73 and extrapolating back to 1960 and forward to 1977. RPI* is projected by extrapolating its 1965-73 trend growth rate from the 1973 figure. WC is assumed to grow at the same rate as the other, but differently defined, unit cost variable UC (see Table 10) and PGM is recalculated from the corresponding projected import price deflator in Table 11. TC is assumed to grow at the same rate as RPI, so that for projected RPI we solve:

$$RPI = \left[RPI^* - 0.1TC^* - 0.38\ (WC^* - WC) - 0.20\ (WC^*_{-1} - WC_{-1}) - 0.19\ (PGM^* - PGM) - 0.13\ (PGM^*_{-1} - PGM_{-1})\right] \Big/ \left(1 - 0.1\frac{TC_{-1}}{RPI_{-1}}\right) \qquad 15.2$$

and

$$TC = \frac{RPI}{RPI_{-1}} \cdot TC_{-1} \qquad 15.3$$

These projections make no explicit allowance for any feedback effects from retail prices to wage costs, etc. The first-round effects of a devaluation, for example, are allowed for via the effect on import prices, but no allowance, over and above the assumption already built in about future wage movements, is made for possible further repercussions on labour costs through increased wage claims.

Table 16 Real national income and consumption

Real national income is a measure of the total resources available for domestic expenditure (including consumption and investment, both public and private) given a constant balance of payments target on current account.

RNI Real national income, index 1970 = 100

To ensure the exact identity

Balance of payments on current account ≡ national income - domestic expenditure

national income at current prices is defined as G.D.P. at factor cost plus net income from abroad less net transfers abroad, and domestic expenditure is defined at factor cost inclusive of the residual error arising from discrepancies between the expenditure and compromise estimates of G.D.P. National income in real terms is then defined as national income at current prices divided by the deflator for domestic expenditure at factor cost (P.D.F.).

The identity above can be used to construct estimates of real national income (in £ million at 1970 prices) as follows:

Domestic expenditure at factor cost ≡ Y + M - X

Real national income ≡ B/PDF + (Y + M - X)

Projections of real national income for G.D.P. growth at different rates incorporate balance of payments projections in Table 11 and are therefore based on the same assumptions about world trade and relative costs. The overall balance on current account (B) includes projections of net foreign income and transfers from Table 5, with interest payments adjusted to take account of differing patterns of borrowing from abroad. The deflator, P.D.F., is estimated for future years using the retail price index (R.P.I.) in Table 15.

Projections of personal consumption are taken from Table 13.