Table 3.7 Values of K

Year \ Case	0	I	II	III	IV	V
1955	19731	19731	19731	19731	19731	19731
1956	20814	20706	20706	20706	20706	20706
1957	22017	21777	21740	21753	21782	21782
1958	23433	23028	22914	22957	23055	22905
1959	24845	24387	24231	24323	24437	24083
1960	26425	25903	25680	25844	25971	25623
1961	27832	27501	27294	27556	27600	26405
1962	29649	29222	29043	29436	29365	27725
1963	31551	31152	30961	31521	31300	29222
1964	33743	33425	33063	33833	33499	31010
1965	36182	35903	35398	36431	35928	32698
1966	38759	38455	37878	39235	38415	34458
1967	41421	41123	40498	42252	40998	36263
1968	44455	44039	43329	45563	43834	38156
1969	47567	46997	46179	48991	46720	40125

Table 3.8 Values of I - (Y - C)

Year \ Case	0	I	II	III	IV	V
1955	694	530	530	530	530	530
1956	528	475	493	486	480	480
1957	547	458	492	479	480	404
1958	528	495	507	485	519	387
1959	393	479	501	471	498	339
1960	490	538	509	468	570	333
1961	665	538	503	451	583	326
1962	556	535	525	459	541	292
1963	410	491	582	502	416	205
1964	765	550	607	514	500	95
1965	612	620	616	508	554	124
1966	315	642	615	491	556	153
1967	503	629	622	482	546	100
1968	682	536	535	380	462	15
1969	812	519	468	295	501	-82

Table 3.9 Values of M* - X*

Year \ Case	0	I	II	III	IV	V
1955	188	20	20	20	20	20
1956	8	30	-13	2	23	46
1957	293	161	75	108	70	157
1958	73	208	165	220	51	196
1959	-108	341	269	351	84	317
1960	-119	193	226	339	28	149
1961	381	283	330	481	82	229
1962	1133	469	463	661	217	389
1963	93	518	298	551	546	409
1964	578	548	374	688	648	370
1965	211	292	221	606	673	95
1966	423	-110	-144	324	775	-309
1967	570	264	181	744	977	45
1968	1172	932	823	1495	1124	713
1969	1236	1231	1206	2008	1226	966

Appendix 4. Projections for 1971-1975

Our main purpose in this appendix is not to come up with forecasts for 1971-1975 but rather to analyze the predictions generated by the model given by our estimates of the exogenous variables for 1971 and various assumptions on their annual growth rates from 1971 to 1975. These assumed growth rates are: 6% for W, 2.5% for both P_x and P_m, 8% and 10% for X, and from 5% to 15% for Z. For 1971 we take W = 2400, P_x = 325, P_m = 250, X = 2900, Z = 5100, and K = 55639. The projections for 1971-1975 are presented in the following tables for selected combinations of the various growth rates assumed for X and Z, denoted by r(X) and r(Z).

Table 4.1. Projections for 1971-1975: r(X) = 8%, r(Z) = 7%.

	1971	1972	1973	1974	1975
Y	21379	22648	23997	25432	26959
N	13273	13776	14314	14889	15503
P	209.2	218.9	229.2	240.1	252.3
M	4200	4489	4796	5123	5469
C	17793	18819	19906	21059	22282
I	3944	4180	4432	4701	4990
I - (Y-C)	358	352	341	329	313
M* - X*	1075	1070	1048	1006	939

Table 4.2. Projections for 1971-1975: r(X) = 8%, r(Z) = 8%.

	1971	1972	1973	1974	1975
Y	21379	22704	24130	25667	27325
N	13273	13834	14445	15111	15838
P	209.2	220.8	233.3	246.8	261.4
M	4200	4510	4840	5193	5571
C	17793	18815	19912	21090	22357
I	3944	4213	4505	4821	5165
I - (Y - C)	358	325	287	245	198
M* - X*	1075	1122	1163	1196	1218

Table 4.3. Projections for 1971-1975: r(X) = 10%, r(Z) = 10%.

	1971	1972	1973	1974	1975
Y	21379	22814	24400	26156	28104
N	13273	13949	14712	15573	16545
P	209.2	224.6	241.5	260.1	280.4
M	4200	4571	4974	5412	5889
C	17793	18808	19927	21162	22529
I	3944	4286	4667	5093	5569
I - (Y-C)	358	280	194	99	-6
M* - X*	1075	1086	1083	1061	1018

Table 4.4. Projections for 1971-1975: r(X) = 10%, r(Z) = 11%.

	1971	1972	1973	1974	1975
Y	21379	22869	24536	26403	28497
N	13273	14007	14847	15807	16907
P	209.2	226.6	245.7	266.9	290.4
M	4200	4591	5019	5487	5998
C	17793	18805	19932	21193	22606
I	3944	4319	4742	5220	5759
I - (Y-C)	358	254	138	10	-132
$M^* - \bar{X}^*$	1075	1139	1201	1262	1321

Consider now the behavior of the trade deficit (M^*-X^*) under the various assumptions on increases in X and Z. For a fixed rate of increase in X (whether 8% or 10%), the trade deficit tends to have higher absolute values at higher rates of increase in Z. Also, higher growth rates of Z will either slow down the rate of decrease of a narrowing trade deficit or step up the rate of increase of a widening gap.

Under either of the two values assumed for r(X), M^*-X^* tends to decline while I - (Y-C) tends to rise if r(Z) = 5%. As the rate of increase in Z is progressively accelerated from 5%, the rate of decline in M^*-X^* slows down until finally a value for r(Z) is reached which leads to a widening instead of a narrowing trade gap. Beyond this "threshold" value of r(Z), further increases lead to an even more rapidly increasing trade deficit.

As Tables 4.1 and 4.2 indicate, if r(X) = 8% the threshold value for r(Z) is between 7% and 8%. That is, the trade deficit will decline if money supply were to increase by 7% or less per annum and rise if money supply were to increase by 8% or more. If r(X) = 10% on the other hand, the annual growth rate for money supply at which the trade gap will start increasing is between 10% and 11%. (See Tables 4.3 and 4.4)

In the case of I - (Y-C), as r(Z) is progressively increased from 5% (keeping r(X) fixed), the rate at which this gap widens from 1971 to 1975 decelerates until a narrowing instead of a widening investment-saving gap results. From Tables 4.1-4.4 it can be seen that this shift in direction occurs at a value of r(Z) lower than that which leads to an increasing trade

deficit. This is due to the strong effect on Y of increases in Z (see the reduced-form equation for Y) which causes I - (Y-C) to decrease at a faster rate than M^*-X^* increases as the rate of growth of Z is raised.

Needless to say, all the projections reported above are premised on the assumptions made about the growth rates of the exogenous variables; they also presuppose that the corresponding foreign capital inflows are forthcoming. It should also be remembered that the import equation involves the volume of exports as a proxy variable for policy decisions. A more restrictive policy would in effect reduce the coefficient of this variable, thus reducing imports and consequently investment.

Footnotes

1. The authors are grateful to the National Economic Council for financial support of this project, which was originally suggested by its Chairman, Dr. Gerardo P. Sicat. Dr. Gonzalo M. Jurado gave valuable comments and help regarding the data; Miss Ofelia C. Tabora, Messers. Ernesto L. Arseno Floreta and Porfirio Sazon provided very able research assistance. Thanks are also due the University of the Philippines Computer Center where the computations were made. Needless to say, the authors are solely responsible for the contents of this paper.

2. We intend to look into two-stage least squares and other possible estimates at a later time after we have built the submodels mentioned in the

3. We used the Central Bank employment indexes for the period 1950-1955 and converted these into figures compatible with later years, as no national employment surveys were made prior to 1956.

4. The coefficient 2.58 follows an assumption made by other writers [cf. 4, p. 212, n. 4].

5. Two similar equations with money supply unlagged and lagged six months are slightly inferior by the usual statistical criteria. The equation in the text has higher t-values, higher R^2, and a lower standard error of estimate.

6. Eq. (4) indicates that a one-unit increase in Y leads *ceteris paribus* to a .0885 increase in M, while this figure would be within the range of credibility for the marginal propensity to import, we would not use this

term to describe the coefficient .0885 since the concept of the marginal pro-
sity
sity to import was devised originally in a context where demand considerations
are not clearly constrained by policy decisions.

7. From the viewpoint of statistical estimation, however, the assump-
tion would be that error terms are statistically independent of these variables.

8. We take 1955 as the initial year because the tax-yield equation
was estimated only from 1955-1969 data.

9. The adjustment is relatively slow partly because of our assumed
depreciation rate. A higher rate would yield faster adjustment and smaller
long-run multipliers.

10. It is interesting that Case I gives a drop in employment in 1970
like the observed series.

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