Table 7. Actual and Estimated Outputs, 1965
(million)

	Q*NEC'65[a] (1)	QNEC'65[b] (2)	(3)=[(1)-(2)]/(2)
1. Agriculture, etc.	6,483	6,885	-5.83
2. Mining	204	407	-49.76
3. Manufacturing	10,580	11,317	-6.50
4. Construction	1,952	1,947	0.23
5. Transportation, etc.	2,069	1,723	20.07
6. Commerce & Trade	7,871	7,193	9.41
7. Services	4,723	5,306	-10.98

[a] Q*NEC'65 - estimate of total demand using NEC 1965 final demand vector and BCS 1965 $(I-A)^{-1}$.

[b] QNEC'65 - total demand vector of NEC 1965 I-0 (transactions) table.

the same point in time) $Q^*_{BCS'61}$ should equal $Q_{BCS'61}$. As
Table 5 shows, however, such equality or near equality is
not satisfied. Structural implications such as this led
to the Sicat conclusion.

The poor performance of the 1961 tables in the
comparison made above leads us naturally to ask the same
question of the 1965 tables. In Tables 6 and 7 we show
output estimates and actual sectoral outputs. For Table 6
we used the NEC table and the BCS final demand vector to
estimate outputs, and for Table 7, we used the BCS table
and the NEC final demand vector to estimate outputs. We
compare both estimates to the actual output vectors.

From Table 6 we observe that the NEC table overesti-
mates output for the Mining Sector by 63 per cent. On the
other hand, it underestimates the output of construction by
only 0.54 per cent. It is clear moreover that its estimates
of the outputs of Agriculture, Manufacturing, Transportation,
etc., and Commerce and Trade are all less than 10 per cent.
While the deviations for the first two sectors mentioned
are large, and therefore where such deviations can hardly
be attributed simply to random errors of measurement, the
small errors for the other sectors may warrant the

conclusion that the BCS and NEC tables are not entirely useless. This is especially true if our prime interest lies in the more important sectors of the economy, Agriculture and Manufacturing.

However, by using the BCS table to predict output given the NEC final demand vector (Table 7), the deviations between estimates and actual values in general are smaller. In fact, in this case, for Mining the deviation is now only -49.76 per cent, compared to 63 per cent (Table 6). Nevertheless, an increase in   absolute terms from 6.25 per cent to 20 per cent is evident for Transportation, etc. While the smaller deviations on the whole may be of some comfort, bolstering our conclusion about the usefulness of either the NEC or BCS tables for 1965, in truth they lead to more pessimistic conclusions.

Let us observe the formal identity of this method of testing the equality of the NEC and BCS tables and the pro-jection method. If we let $A_{NEC} = A(0)$, $A_{BCS} = A(-T)$, $Y_{BCS} = y(-T)$ and $y_{NEC} = y(0)$, the figures we have in Table 6 are "backward projection" errors and those for Table 7 are "forward projection" errors, i.e.,

(20) $\qquad Q^*_{BCS} - Q_{BCS} = \{[I-A_{NEC}]^{-1} - [I-A_{BCS}]^{-1}\}Y_{BCS}$

$$= \Delta B Y_{BCS}$$

(21) $\qquad Q^*_{NEC} - Q_{NEC} = -\Delta B Y_{NEC}$

In Table 8 are reported the compositions of final demand for the NEC and BCS final demand vectors. The structures of the two final demand vectors are different. As we have discussed more fully in the projection exercise, such changes in final demand composition will account for the smaller margins of error in the "forward projection", i.e., in the smaller margins of error in Table 7 as against those of Table 6. In fact for the given values of the Δb_{ij}'s for any sector i, it is possible to find a final demand vector such that the "forward projection error" for sector i equals zero. Similarly, for a different sector k, with its given Δb_{ij}'s, an appropriate final demand vector will also make the "projection" error for such sector equal zero. Also, it is not impossible to look for a final demand vector such that the errors for all the sectors as a whole are least.[1]

The significance of all this is quite clear. Now we

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[1] Theoretically, all these possibilities can arise if Δb_{ij}'s about row i vary in sign. A check of the NEC and BCS Leontief inverses does show this.

can no longer say that either or both of the NEC and BCS
tables can be used if we are more concerned about the
"important" sectors Agriculture and Manufacturing. While
it is true that the errors we have calculated for these two
sectors are within reasonable limits, this may only be true
for the final demand vectors we have used in these calcula-
tions. In practice, we will be using different final
demand vectors and, therefore, there will be no guarantee
that both BCS and NEC tables will predict identical output
levels. If they do not, there is still the question as to what
output prediction to trust; there is no answer forthcoming
to this one.

Of course it can be said that the uses to which the
I-O tables are used are cases where the composition of final
demand does not differ much from those used in our calcula-
tions. This may be so, but then it puts an unwarranted
constraint to whatever analysis is undertaken that makes use
of input-output tables. Moreover, it is hardly an argument
against Sicat's conclusion regarding the 1961 tables which
with practically undiminished force, applies to the 1965
I-O tables.

VII. Concluding Remarks

The input-output tables prepared by the NEC and the BCS ~~tables~~ are very much different from each other that we can be sure both cannot be right. It seems that neither can be right either. Both show structural changes that are quite fantastic for any economy for a time interval of only five years. This is seen from a comparison of substitution and fabrication effects computed on the basis of tables prepared by both institutions.

Fabrication & Substitution Effects, 1961-65

	r_i		s_j	
	NEC	BCS	NEC	BCS
1. Agriculture	.500	.577	.843	.474
2. Mining	1.309	1.369	1.732	.974
3. Manufacturing	1.027	.577	.730	.411
4. Construction	.577	4.999	1.450	.356
5. Transportation, etc.	1.024	.577	.632	.843
6. Commerce & Trade	1.186	1.369	1.450	.267
7. Services	.667	2.108	.308	.356

It is interesting to turn around the R A S method and start with the hypothesis that $r_i \simeq 1$, $s_j \simeq 1 (i,j=1,\ldots,7)$.

Table 8. <u>Sectoral Final Demand as a</u>
<u>Share of Total Demand, 1965</u>

	BCS	NEC
1. Agriculture, etc.	15.34	15.12
2. Mining & Quarrying	1.44	0.37
3. Manufacturing	42.72	29.75
4. Construction	7.93	8.46
5. Transportation, etc.	10.37	4.45
6. Commerce & Trade	17.51	22.91
7. Services	4.65	18.90
Total	100.00	100.00

Table 9. Actual and Estimated Outputs Based on
Competitive Treatment of Inputs,
1965
(million)

	Q*BCS'65[a] (1)	QBCS'65 (2)	(3) = [(1)-(2)]/(2)
1. Agriculture, etc.	8,314	8,363	-0.59
2. Mining	498	518	-3.83
3. Manufacturing	14,847	15,791	-5.98
4. Construction	2,103	2,117	-0.65
5. Transportation, etc.	3,555	3,881	-8.41
6. Commerce & Trade	6,921	7,726	-10.43
7. Services	2,331	1,576	47.94

[a] $Q*BCS'65 = [I-A(NEC'65)]^{-1} y_{BCS'65}$ comp., where $y_{BCS'65}$ comp. = the final demand vector given in the BCS I-0 table for 1965 with inputs treated as competitive inputs.

Given this hypothesis differences between the computed
values of r_i's and s_j's from their expected values of close
to one indicate statistical errors of measurement, concep-
tual differences or both. Of course we are not suggesting
that a sophisticated tool such as the RAS method be used
for such purpose; there are other, simpler devices to
indicate errors in measurement. It is just that, since we
have the R A S results anyway, then their most useful inter-
pretation should be exploited.

Nevertheless, the unrealistic values we get for the
substitution and fabrication effects for either the BCS or
NEC tables may reflect simply errors in 1961 tables where
the 1965 ones are reasonably accurate. For instance, if we
remove the effects of the difference in treatment of imports
by the NEC and the BCS, the structural implications of the
1965 tables of both institutions appear to be reasonably
close. This is seen from Table 9 where the output vector
of BCS treating imports as competitive, and the estimate of
this vector based on the NEC I-0 table for 1965 and the BCS
final demand vector are compared.[1] Only for Services is the

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[1] We could have made both NEC and BCS tables strictly
comparable by adjusting the latter to the former in its
treatment of imports. However, this adjustment can only be
done for the 1965 BCS table and not for 1961. For the projec-
tion and R A S exercises, it was necessary to maintain the
BCS treatment of imports as non-competitive.

output estimate significantly different from the actual output.

However, from our discussion in the section on the projection method, the closeness in the estimated and actual values of output may be due simply to the particular structure of final demand vector we used in making the estimates. Change this structure and you disturb the seeming identity between estimates and actual values.

Apart from this qualification to the tempting conclusion that both NEC and BCS I-0 tables for 1965 are reasonably accurate are the implications of other conceptual differences between the NEC and BCS that led us to think that the differences in the treatment of imports are not crucial. Let us consider more specifically the Services sector. The BCS enters Government Services in the fourth quadrant of the I-0 matrix, i.e., Government Services are entered directly as final consumption along the primary input row, compensation of employees. On the other hand, the NEC enters Government Services along the producing industry, Services. If we adjust the NEC table following the BCS treatment of Government Services, the input coefficients for the producing sector, Services, likewise change.

Table 10. Services Sector Input Coefficients

	BCS I-0	NEC I-0 (including government services)	NEC I-0 (excluding government services)
1. Agriculture, etc.	.00771	.0308	.0436
2. Mining	.00002	.0001	.0002
3. Manufacturing	.14559	.1063	.1504
4. Construction	.00241	.0006	.0010
5. Transportation, etc.	.04651	.0174	.0247
6. Commerce & Trade	.06671	.0479	.0679
7. Services	.07417	.0512	.0725
T o t a l	.34312	.2546	.3603

These changes are shown in Table 10.[1]

In general, the effects of these changes on a revision of Table 9 will be something like this: The deviation between estimated and actual output for the Services sector will increase; that for the other sectors will tend to change from the given negative values (column 4, Table 9) to zero, or even to some positive value. At any rate, all these still warrant the conclusion that both NEC and BCS tables, as they stand, may be untrustworthy tools for projection or planning purposes. A more fruitful approach may be to re-adjust the two tables where they are most different, and come out with just one table, say for 1965. The rationale for this is that where the NEC and the BCS differ much, that is where conceptual differences and errors in measurement principally lie.

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[1] Since the NEC tables can be adjusted to be comparable to the BCS tables as far as treatment of government services was concerned, and not vice-versa, we did not think it worthwhile to re-calculate the technology matrices of the NEC tables.

Appendix Table 1. Price Indices

	1965	1961	1965/1961
1. Agriculture, etc.	149.3	118.8	1.2567
2. Mining	120.5	82.0	1.4695
3. Manufacturing	147.5	126.0	1.1706
4. Construction	147.4	119.3	1.2355
5. Transportation, etc.	129.2	115.8	1.1157
6. Commerce & Trade	141.6	121.3	1.1674
7. Services	129.7	113.8	1.1397
8. Imports	170.2	144.5	1.17785
9. Labor: (Wage Indices)			
1. Agriculture, etc.	767.5	632.5	1.2134
2. Mining	1,124.0	1,836.0	1.1569
3. Manufacturing	1,896.0	1,620.0	1.704
4. Construction$\underline{a}$/	1,896.0	1,620.0	1.704
5. Transportation, etc.	2,520.0	2,184.0	1.1538
6. Commerce & Trade	2,412.0	2,304.0	1.0469
7. Services$\underline{b}$/	2,412.0	2,304.0	1.0469
10. Depreciation	180.8	147.5	1.2258
11. Other Value Added$\underline{c}$/	143.0	118.8	1.2037
12. Indirect Taxes less Subsidies$\underline{c}$/	143.0	118.8	1.2037

$\underline{a}$/The index used here is that for Manufacturing.

$\underline{b}$/The index used here is that for Commerce.

$\underline{c}$/The index used here is the GNP price deflator.

Source: Mahar Mangahas and Jose Encarnacion, Jr., "Production Sub-Model of the Philippine Economy: 1950-1969" Discussion Paper No. 71-26. IEDR, UP, School of Economics. 1971.

Appendix Table 2. <u>Coefficients a_{ij} (1961) in 1965 Prices</u>

	1	2	3	4	5	6	7
1. Agriculture, etc.	.019088	.015479	.070282			.001050	.005512
2. Mining & Quarrying		.004315	.007499	.014026	.000159		
3. Manufacturing	.064709	.058527	.117684	.070133	.080193	.003512	.023241
4. Construction	.005156	.024826	.002240	.024799	.019713	.000110	.018078
5. Transportation, etc.	.007193	.026041	.019856	.012141	.012315	.002751	.013889
6. Commerce & Trade	.242662	.187513	.167006	.237885	.050568	.017639	.058107
7. Services	.077925	.036370	.029871	.002097	.010516	.002094	.023086
Total	.416733	.353071	.414438	.361081	.173464	.027156	.141913

Appendix Table 3. <u>Primary Input Coefficients (1961) in 1965 Prices</u>

	1	2	3	4	5	6	7
8. Imports	.029828	.062100	.054959	.061691	.018354	.002463	.007334
9. Compensation of Employees	.285336	.187791	.093447	.174102	.102714	.056567	.321561
10. Depreciation	.025751	.135268	.018380	.339282	.305129	.008283	.029214
11. Profits	.237772	.202776	.360135	.063844	.400339	.905531	.499973
12. Indirect Taxes less Subsidies	.004580	.058994	.058641				
Total	.583267	.646929	.585562	.638919	.826536	.972844	.858087

Appendix Table 4. Components of Demand (1961) in 1965 Prices

(in P1000)

	Private Consumption Expenditures	Government Consumption Expenditures	Fixed Capital Formation	Net Inventory Change	Exports	Total Final Demand	Total Demand
1. Agriculture, etc.	2,768,911	45,869	126,633	941,507	231,443	4,114,363	4,951,253
2. Mining			10,754	5,277	229,991	246,023	333,930
3. Manufacturing	5,752,640	412,305	846,850	525,311	866,630	8,403,736	10,265,354
4. Construction	241,592	84,745	94,478	71,925		492,740	646,713
5. Transportation, etc.	1,738,154	135,465	208,370	181,355		2,263,344	2,591,584
6. Commerce & Trade	2,107,271	114,873	447,898	189,022	142,836	3,001,900	6,473,702
7. Services	641,743	56,822	11,447	3,589	124,151	837,752	1,621,960

Appendix Table 5. $(I-A)^{-1}$ 1961 BCS

	1	2	3	4	5	6	7
1. Agriculture, etc.	1.02599	0.02172	0.08263	0.00671	0.00701	0.00143	0.00806
2. Mining	0.00071	1.00529	0.00869	0.01511	0.00118	0.00004	0.00051
3. Manufacturing	0.08023	0.07514	1.14467	0.08576	0.09522	0.00452	0.03089
4. Construction	0.00746	0.02729	0.00461	1.02652	0.02109	0.00024	0.01946
5. Transportation, etc.	0.01116	0.02972	0.02512	0.01563	1.01514	0.00298	0.01556
6. Commerce & Trade	0.27463	0.22067	0.22160	0.26890	0.07637	1.01944	0.07352
7. Services	0.08504	0.04231	0.04267	0.00667	0.01465	0.00247	1.02560

Appendix Table 6. Coefficients a_{ij} (1965)

	1	2	3	4	5	6	7
1. Agriculture, etc.	.153240	.004760	.199536		.001337		.007714
2. Mining & Quarrying	.000030	.006974	.003769	.041005	.000091		.000021
3. Manufacturing	.074260	.182690	.156208	.352785	.153968	.018376	.145592
4. Construction	.007087	.000344	.000001	.011111	.001552	.000007	.002407
5. Transportation, etc.	.037582	.020845	.036265	.018927	.016254	.020809	.046513
6. Commerce & Trade	.047862	.094434	.069354	.153727	.093867	.119333	.066710
7. Services	.009920	.001274	.006198	.007610	.011599	.003830	.074173
T o t a l	.329981	.311321	.471331	.585165	.278668	.162355	.343130

Appendix Table 7. Primary Input Coefficients (1965)

	1	2	3	4	5	6	7
8. Imports	.024370	.055940	.080833	.154437	.044383	.004409	.137414
9. Compensation of Employees	.311285	.260392	.184382	.157102	.321823	.150386	.255417
10. Depreciation	.016813	.029176	.018380	.004154	.047079	.006529	.002993
11. Other Income						.140011	
12. Rent	.049562	.000158					
13. Profits	.260852	.322318	.228678	.068874	.291078	.495841	.248143
14. Indirect Taxes & Import Duties	.007137	.020695	.016396	.030268	.017969	.040469	.012903
T o t a l	.670019	.688679	.528669	.414835	.721332	.837645	.656870

Appendix Table 8. Components of Demand (1965)
(in ₱000)

	Private Consumption Expenditures	Non-Profit Private Institutions	Gov't. Consumption Expenditures	New Public Capital Expenditures	New Private Capital Expenditures	Net Inventory Change	Exports	Total Final Demand	Total Demand
1. Agriculture, etc.	2,237,196	612	5,900			408,575	1,258,605	3,910,888	8,363,059
2. Mining	11,585	17	68			59,552	296,271	367,493	518,034
3. Manufacturing	8,839,449	5,511	147,524	19,969	78,211	599,570	1,202,354	10,892,588	15,790,653
4. Construction	84,081	329	278,765	285,508	1,375,163			2,023,846	2,116,691
5. Transportation, etc.	2,309,349	1,254	59,502	168	2,612	209,780	63,250	2,645,915	3,880,901
6. Commerce & Trade	3,614,957	6,056	110,998	16,041	204,612	296,782	215,730	4,465,176	7,726,371
7. Services	1,137,443	4,777	44,975					1,187,195	1,576,326

Appendix Table 9. $(I-A)^{-1}$ 1965 BCS

	1	2	3	4	5	6	7
1. Agriculture, etc.	1.21055	0.06094	0.28967	0.10841	0.04856	0.00745	0.05890
2. Mining & Quarrying	0.00088	1.00795	0.00477	0.04354	0.00093	0.00013	0.00095
3. Manufacturing	0.12457	0.23413	1.22826	0.45814	0.19858	0.03123	0.20761
4. Construction	0.00880	0.00086	0.00220	1.01214	0.00200	0.00012	0.00316
5. Transportation, etc.	0.05351	0.03539	0.05964	0.04695	1.02922	0.02584	0.06352
6. Commerce & Trade	0.08406	0.13410	0.12068	0.22939	0.12959	1.14156	0.10904
7. Services	0.01490	0.00461	0.01260	0.01414	0.01530	0.00534	1.08341

Appendix Table 10. Ratios of Primary Input Coefficients $qf_j(1965)/qf_j(1961)$

	1	2	3	4	5	6	7
8. Imports	0.817018	0.900805	1.470787	2.503396	2.418165	1.790093	18.736567
9. Compensation of Employees	1.090942	1.386605	1.9731184	0.902356	3.123459	2.658547	0.794303
10. Depreciation	0.652907	0.215690	1.000000	0.0122435	0.1542921	0.788241	0.102451
11. Profits	1.305511	1.590307	0.634979	1.078786	0.727079	0.7021868	0.496303
12. Indirect Taxes less Subsidies	1.558297	0.350798	0.279599				
T o t a l	1.148735	1.064536	0.902840	0.649276	0.872717	0.861027	0.765505

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CAPITAL FLOWS FROM REGIONALLY DEPRESSED AREAS AND IMPLEMENTATION OF REGIONAL CONTRA-CYCLICAL POLICIES: A RESEARCH PROPOSAL

by

Dudley W. Johnson

CAPITAL FLOWS FROM REGIONALLY DEPRESSED AREAS AND IMPLEMENTATION OF REGIONAL CONTRA-CYCLICAL POLICIES: A RESEARCH PROPOSAL

I.   Introduction

Currently (January, 1972) the unemployment rate in the United States is 6.0 percent. However, most forecasts predict that this will be substantially reduced during the incoming year. In the Seattle-Metropolitan Area, the current unemployment rate is 15 percent. It has been at approximately this level for the past several years, with no foreseeable improvement. The current situation stands in vivid contrast during most of the 1960's; unemployment reached a minimum of 2.8 percent in 1968. Also, the current unemployment rate amongst blacks is alarming: it's over 20.

Setting aside the tremendous economic losses to the Seattle-Metropolitan Area, as well as the incalculable psychological effects on the unemployed and their families, one trained in economics might say that there is nothing unique about the situation in the Northwest, or, for that matter in any other regionally depressed area in the U.S. This is inherent in the dynamics of the market system and there exists automatic equilibrating mechanism

in the pricing system which will **eliminate** unemployment in regionally depressed areas.

What we do first is present this equilibrating model. Secondly, we present the details of our research proposal, which consist of three areas: (1) We examine the empirical validity of the regional equilibrating model. As **shown** subsequently, this will be done by examining several of the major implications of the model which pertain to the flow of funds and interest levels in depressed areas. For example: Are the activities of private lending agencies pro-cyclical or anti-cyclical? This is one of several empirical questions examined. (2) Articulate a theory of regional monetary-fiscal policy. It will be argued that the same fundamental theoretical reason for needing macro monetary-fiscal policies -- they are a substitute for the absence of wage and price flexibility -- applies equally to regions as well. (3) Finally, we shall examine the merits and failures of selected policy tools to assist regional economic development and mitigate the structural disturbances that arise from the excessive amplitude of regional fluctuations in economic activity.

II. The Regional Self-Correcting Model

We shall consider as one trading unit some region served by a regional Federal Reserve Bank. Name this region Alpha. Trade between this region and the rest of the United States will be internal to the nation. This trade will, of course, be carried out using dollars and these dollars must exchange with the dollars of any other region in the nation on a 1-for-1 basis. What we have, obviously, is internal trade with fixed exchange rates. As a result, all changes in demand and supply that lead to a disturbance in the balance of payments of the Alpha region will not affect the rate at which Alpha money -- Federal Reserve notes and demand deposits -- exchanges for the notes and deposits of other Federal Reserve regions.

Investment, or changes in the stock of real capital, in the Alpha region will depend primarily on entrepreneurial expectations of profits from the future flow of capital services, the cost of capital, the ability of entrepreneurs to obtain finance, the rate of capital depreciation, and the supply elasticity of the capital goods producing industries.

A few words should be said about the loanable funds market in a regional area such as Alpha. It is illuminating to contrast such a market, which is part and parcel of an open economy, with that of a closed economy. In a closed economy, as in an open one, the demand for money capital is negatively related to interest rates, and is also subject to (rightward and leftward) shifts because of technological changes, income and employment changes, migration of labor, and so forth. Similarly, the supply of money capital is positively sloped with respect to interest rates as funds are made available because the reward for waiting induces more savings on the part of income recipients.

However, the pure theory of an open regional economy implies, by contrast, that financial funds flow rapidly into and outside of the region in response to shifts in demand and interest rate differentials. Thus, a closed economy has a positively sloped supply of funds curve while an open regional economy has a horizontal (or nearly horizontal) supply of funds curve.

If the supply curve of monetary capital is not horizontal it is nearly so. However, the data required to be more definitive than this in the matter is currently

absent. Surely, the development of rapid transfer of fund
ownerships regionally by electronic means has greatly reduced
the degree of "closedness" of any region in our country.

Building on these thoughts, note that if a closed
economy faces a decline in the demand for funds (leftward
shift) one would expect interest yields to fall, given a
positively sloping supply curve. Assuming that the supply
curve of funds is positively sloping, the reduction in the
quantity demanded of loan funds is less than the leftward
shift in the demand curve. However, if the supply of funds
curve is horizontal instead of positively sloped the quantity
of funds demanded falls by the full amount of the reduction
(shift to the left) in demand. Also, there is no reduction
in the rate of interest. It is clear that if the region
were closed rather than open, which causes a rising supply
of funds curve, the adverse effect of reduced demand would
be partially mitigated by falling interest rates. In an
open economy no such partial offsets to adverse shocks exist.
Now let us analyze the theoretical adjustment mechanism
between the Alpha region and the rest of the economy.

Consider the situation depicted below. Assume that
the balance of payments between the Alpha region and the rest

Rest of Nation's Dollar
Price of Alpha Region's
Dollar
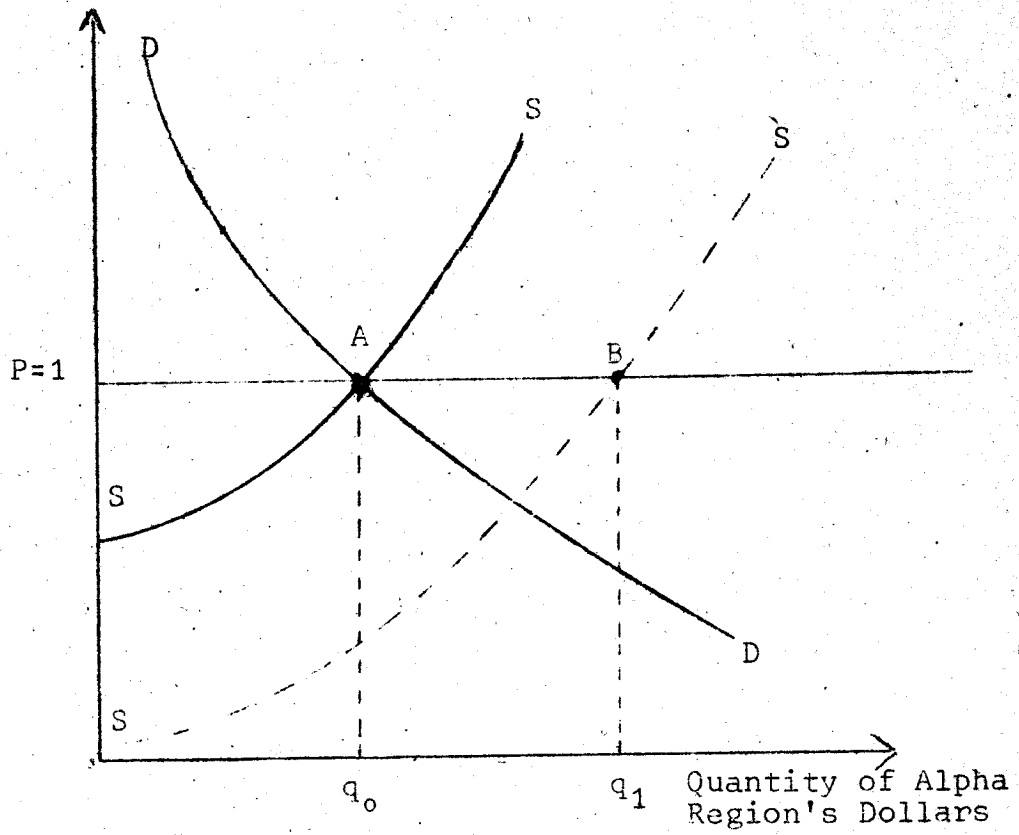
Supply and Demand for Alpha Region's Dollars

of the nation is on balance at point A. At this point, Alpha
region's sales of goods plus other receipts from the rest
of the economy are precisely equal to the purchases from
plus other payments to the rest of the country. (One can
formulate the balance-of-payments equilibrium position more
rigorously than this, but this definition suffices for our purposes)
Under these idealized conditions, the holdings of money assets
in the Alpha region -- and the rest of the economy -- are
stable.

Suppose that there is a disturbance on Alpha's
balance of payments causing it to incur a deficit in its
current account --, i.e. imports exceeding exports. This
could have developed either from a sharp reduction in its
exports, imports remaining the same, a rise in imports,
exports remaining the same, or a combination of the two.
In any event, let us simply describe this deficit in value
terms by saying that the citizens of the Alpha region have
increased their supply of dollar to the rest of the economy:
e.g., the shift from SS to S'S' in our Figure. Since the
exchange rate is fixed at 1, Alpha's balance of payments
deficit is $q_1 - q_2$. The money holdings of the citizens
in Alpha will fall over time by $q_1 - q_2$ dollars. This decline

in the cash balances of the Alpha region has several

consequences. And, given the explicit and implicit assump-

tions of the model, each of these consequences helps to

decrease the deficit in the Alpha region's balance of

payments and restore equilibrium.

(1) Money assets and incomes fall in Alpha. This

causes a reduction in demand for all goods and services, both

locally produced goods and goods produced in the rest of the

nation. This general decline in the demand for goods and

services will result in the supply function S'S' shifting

to the left, back in the direction of point A. Not all the

way as some of the burden will be carried by the decrease in

the demand for locally produced goods.

(2) As money assets and income in the Alpha region

are falling, the opposite is occurring in the rest of the

country -- i.e., it money assets and income are growing.

This increase in wealth and income will result in a general

increase in the demand for goods and services by residents of

the rest of the nation and hence they will increase their

demand for goods produced in the Alpha region. As a con-

sequence, the demand for Alpha region's dollar will increase,

shifting the schedule DD to the right in the direction of point B.

(3) As aggregate demand falls in the Alpha region, its price level will fall; aggregate demand in the rest of the economy will increase resulting in a rise in its price level. Thus, this change in relative prices will make goods in the Alpha region. cheaper relative to the rest of the country so that the residents of Alpha will reduce their demand for goods produced outside the region. This shifts the supply function S'S' back in the direction of point A, thus reinforcing effect 1 above. Conversely, the people in the rest of the economy are being faced with higher local prices. The DD function shifts to the right, thus reinforcing effect 2 above.

(4) The outflow of money from the Alpha region to the rest of the nation changes the money supply in both areas. It falls in Alpha, and increases in the rest of the economy. As a result, interest rates change. They rise in the Alpha region and fall in the rest of the nation. As a consequence of these interest rate changes, loans made in the Alpha capital markets are more profitable than if made outside the region. The schedule S'S' will, again, shift to

the left toward point A and then reinforce the effects of
items 1 and 3 just discussed. Furthermore, because the
rate of interest is now higher in the Alpha region than
elsewhere, capital will flow into the region. These capital
flows will result in an increased demand for Alpha region's
dollar. The demand schedule DD shifts toward point B and
this reinforces the effects given in items 2 and 3.

In more conventional terminology, we would say that
in the local capital market there occurs an increase in the
supply of loans, partly from the rest of the economy and
from local sources. All of this results from interest rates
differentials.

(5) Because income and prices are falling in the
Alpha region, federal government tax collections in this
region fall relative to collections in the rest of the
nation. So long as the expenditures of the federal govern-
ment in the Alpha region and the rest of the nation remain
the same, this change will result in a leftward shift in
the schedule S'S' toward point A. In addition, we know that
the federal government expenditures in the Alpha region are
likely to grow because it is now becoming a "depressed area."

Those that grow automatically are unemployment compensation
and other welfare programs. This results in the schedule DD
shifting to the right towards point B.

The above describes the usual textbook version of how an
imbalance in the balance of payments for a particular region auto-
matically puts into motion a set of self-correction adjustments. Thes
adjustments may be classified as one of two types: (1) adjust-
ments 1 through 3 are adjustments in the balance on current
account, i.e., they involve adjustment in the level of exports
and imports of the Alpha region; and (2) adjustments (4) and
5 are adjustments affecting the balance in capital account,
i.e., they involve movements of capital from the rest of the
nation to the Alpha region. When the process is completed,
the supply of dollars by the Alpha region to the rest of the
nation and the rest of the nation's demand for Alpha region's
dollar will once again be equal at the fixed exchange rate
of 1 to 1. Hence, the net flow of dollar out of the Alpha
region disappear and its balance of payments position is restored
to one of equilibrium.

Please note the most important variables which produce
the regional equilibrating mechanism. Price level changes,

which tend to promote Alpha's exports and reduce its imports,
and the adjustment on current account (which is "painful and
unpleasant" for the residents of the Alpha region because this
adjustment results in falling income, employment, and prices)
has been reduced by the adjustment on the capital account
caused by the interest rate differential.

III. The Model's Relevance for Depressed Areas

Has the above model's set of predictions pertaining
to the tendency for self-correcting adjustments
occurred in the recent economic depression in the Seattle-
Metropolitan-Area, or for that matter, other depressed areas?
More generally: Can we rely upon relative price level and
interest rate changes as sufficient factors, along
with others like labor out-migration, to provide for
the needed balance-of-payment adjustments as between deficit
and surplus regions? Maybe capital flows are perverse,
therefore, aggravating the economic recession in the deficit
region? Or, if not perverse, maybe the interregional flow
of capital is not sufficiently responsive to interest rate
differentials so as to help eliminate the unemployment in
the deficit area. And, possibly, exports in the depressed

area cannot be stimulated by interregional price level and income effects.

The above are all empirical questions which we propose to explore for the Seattle-Metropolitan-Area. In our judgment, our findings for this area will be applicable elsewhere. First off, we wish to examine whatever regional data are available to see if the area experienced capital flows as the theory suggests. This is a rather important consideration, and it is complicated because in the Seattle economy, a decline in local demand for monetary capital was accompanied by higher yields nationally so the area ended up with a simultaneous leftward shift in demand and upward shift in the horizontal supply of funds schedule so that not only was there no regional mitigation of the adverse shift, but there was an externally imposed accentuation of the shift. The theory then suggests that capital should, because of the fact that interest rates out of the region exceeded those locally, flow out of the Seattle economy. Whether this, in fact, occurred is an empirical question.

Although we wish, as stated above, to examine whatever regional data are available to see if the funds did flow as the theory suggests in our currently depressed region, this examination is _not_ the only focus of our capital flow study. _We wish to consider and examine the possible arrangements that could be made to introduce what we might call "automatic stabilizers on regional capital flows" for the purpose of reducing the amplitude of regional economic disturbances_, assuming that capital flows out of the depressed region, rather than into it. The issue then becomes: _What, if anything, can be done to introduce moderate restraints upon the exodus of capital from a depressed region — an exodus that accentuates adversity?_ It should be noted here that we are considering capital flows out of the deficit region, not capital inflows. Given the empirical interest rate structure the theory may predict this, but the equilibrating mechanism becomes partially, if not totally, non-operative.

Procedure for the Capital Flows Study

The first step is to examine the behavior of private lending agencies to see if their activities seem to be pro-cyclical or anti-cyclical. In a recent newsletter published by a local (Seattle) private financial institution the following statement appeared: ". . . the regional housing market . . . has been strong enough over-all to permit continuation of . . . (the announced policy and promise to its savings and local customers that it will reinvest all deposits in the Oregon and Washington

territory from which those deposits are derived.
In the past two years of economic crisis in
Washington and Oregon we have not exported one
single dime of our (your) resources out of these
two states."

Theory suggests that most other private institutions
did not follow the procedure of retaining local savings to
finance local projects. It will be desirable to examine the
flows of savings in an operational and objective way. The
unique experience of an economy with 15 percent unemployment
in the midst of a national economy with only 6% unemployed
provides an excellent situation for examination. Of course,
it's an observation of only one item, and generalizations
can be drawn only with caution, but, at least the detailed
evidence can be collected on a single "experiment." While
observing regional flows of funds we also wish to examine the
data for perceptible regional interest rate differentials.
Through the market for "federal funds" the commercial banks
of the country adjust their reserves. The rate on this
"overnight money" varies from day to day and is always the
same throughout the country. But, in the longer-term maturity
areas of the capital market, interregional rate differentials

to exist, these must be examined in order to confirm an
interpretation of the effect of regional unemployment on
regional capital flows.

The facet of the presumed current account adjustment
mechanism we want to examine is whether price levels in a
depressed region fall _relative_ to non-depressed regions.
This, along with accommodating capital flows, form the
essence of how an imbalance in the balance of payments for
a particular region, given a fixed exchange rate, automatically
puts into motion a set of self-correcting adjustments.

IV. **The Development of a Theory of Regional Monetary-Fiscal Policy**

We shall also examine the entire question of the
appropriateness of regional monetary policy. This can
proceed while the empirical work progresses. While doing
this we shall consider the ways of effectively implementing
regional fiscal policy.

It is a commonplace that monetary policy, as it is
currently used and with its orthodox monetary tools, can do
little, if anything, to eliminate unemployment in specific
areas once the over-all economy has reached full employment.
In one sense, this is rather paradoxical because the Federal
Reserve System was established with a "regional" frame of
reference. We would like to review the thinking and legis-

lative intent of those who argued for this frame of reference and consider the arguments in the light of current monetary thought, and current institutional arrangements.

It should not be forgotten, that the fundamental reason for contra-cyclical monetary-fiscal policy is because the economy does not have perfect price and wage flexibility -- i.e., contra-cyclical monetary-fiscal policy is a substitute for wage and price flexibility. In a world of perfect price and wage flexibility money only serves as a numéraire. Given the fact that unions in depressed areas similar to the Seattle-Metropolitan-Area not only prevent wages from falling, but actually increase money wages above competitive levels, there will be persistent unemployment, given non-expanding aggregate and regional monetary demand functions. Since unions are an institutional fact, with their relative freedom of behavior fostered and guaranteed by the federal government, and since their unemployment impact is regional, it seems appropriate to re-think through what regional monetary-fiscal policy might do to offset the union induced un-employment. Obviously, unions are not the only, or major, cause of regional unemployment in non-inflationary periods. Reductions in exports, or private investment spending, are

the major factor contributing to regional unemployment. So
our model will be general, dealing with all various causes
of regional unemployment, and what a regionally oriented
contra-cyclical monetary-fiscal policy might do to eliminate it.

V. Selected Tools to Assist Regional Economic Development

Income Bonds

Another facet of our research proposal, which
actually will be the primary focus of our study, is to
examine selected policy tools which would assist regional
economic development, as well as offset regional fluctuations
in economic activity. One such tool is the establishment
of a program under which an "income" bond could be used by
a regional government agency to encourage entrepreneurial
activities in a depressed area. The feasibility of this
plan might be established by a pilot study in the Seattle-
Metropolitan area. Results would be useful and likely
applicable to all other depressed urban areas. We believe
that an important ingredient in the war on poverty is the
channelling of funds to uses that contribute to the
initiative of the recipient, and that enable the recipient
to help himself. Liberalized eligibility standards, long

maturity, and lower interest (coupon) rates than would be
required to induce private lenders into the market should
be considered. Such a plan may, therefore, help to accomplish
objectives that elude direct legislation and administration.
The need for such a plan is clear, especially to potential
entrepreneurs from minority groups, especially Negroes, who
feel shut-off from the normal flow of credit. One of the
most pressing difficulties facing all new entrepreneur's, white
or non-white, is the task of obtaining funds. The problem
exists despite extensive commercial banking facilities in
the major cities in the state of Washington and inspite of
the Federal agencies which operate throughout Washington --
e.g. the Federal Small Business Administration loan and
guarantee program.

Income bonds could be subordinated to all other
indebtedness. They are bonds for which interest payments
specified in the contract must be paid in a given accounting
period only if enough earnings to do so have been raised in
that period. Otherwise the interest payment is postponed.
Obviously, such securities would not be attractive invest-
ment instruments for profit maximizing buyers in the capital
markets. But the unattractive feature associated with income

bonds for private purchasers is a feature that makes them a good instrument to encourage entrepreneurship in depressed areas. Interest is paid only when earned. Thus, they represent something similar to equity capital in many respects. However, detailed consideration of the terms and conditions of their issue and guarantee would be necessary.

Reserve Requirements

Another regional contra-cyclical tool we want to examine pertains to the institutions that compose the supply side of the loanable funds market. The proposal is to have a reserve requirement against the assets of a financial institution (rather than against liabilities as is now the case) such that assets representing loans to local entrepreneurs would be favored. The concept of reserves against categories of assets is not new, but it has recently been suggested again by a member of the Board of Governors of the Federal Reserve System. Governor Andrew F. Brimmer has suggested an asset reserve against types of loans such as consumer, mortgage, business. Here we suggest that regional location of loan use be considered in the asset classification scheme.

We understand that the FDIC limits the extent to which state authorities can change reserve requirements for state-chartered banks. We wonder whether this form of

limitation on regional contra-cyclical monetary policy is desirable. The issue should be examined.

Summary

Details of the study would have to be worked out. However, to repeat, we wish to (a) briefly examine flows of funds and interest levels in our depressed area, (b) articulate a theory of regional monetary-fiscal policy and (c) examine the merits and failings of selected policy tools to assist regional economic development and mitigate the structural disturbances that arise from the excessive amplitude of regional fluctuations in economic activity. Part C is the primary focus of our study.