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The Relation of Exports and Economic Growth

The Relation of Exports and Economic Growth [1]

For many years economists have suspected that there is a significant relationship between a country's exports and its economic growth, but up to now there has not been general agreement as to the nature of the relationship. The aim of this paper is to offer a specific hypothesis regarding the relationship, and to indicate the empirical and other bases supporting this hypothesis.

The Hypothesis Stated

There are substantial grounds for believing that there is a causal relationship between exports and economic growth, and that this relationship is one of interdependence rather than of unilateral causation. There are also grounds for believing, however, that exports are a key factor in promoting economic growth and that it is generally a rise in exports that stimulates an increase in aggregate economic growth, rather than vice versa. But as indicated above, the basic interdependence of these two factors is recognized. Finally, it is also suspected that the above relationship is more likely to prevail where the rate of increase in exports is substantial and maintained, at say 11 per cent per annum or higher, than were the rate is more modest. [2]

Logical Bases for the Hypothesis

There are strong logical and empirical grounds supporting the hypothesis that exports are a key factor in the growth process. The logical grounds can be documented in terms of both the direct and secondary effects of exports on the economy.

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[1] I would like to acknowledge my appreciation for the valuable assistance provided in the preparation of this study by the head and members of the Asia, Africa, and Latin America Section of the Federal Reserve Board, especially Mr. Reed J. Irvine, Mr. Henry F. Lee and Mrs. Dorothy L. Helprin.

[2] This last relationship has a certain parallelism in recent theories on inflation and economic growth. These state that when the rate of inflation becomes substantial, there is a tendency for the economic rate of growth to slow or even stagnate. Probably the foremost proponent of this view is Graeme S. Dorrance of the International Monetary Fund.

There are many direct benefits from a high export growth rate that help in promoting general economic growth. (1) An increasing level of exports generally means that the country has the wherewithal to step up its level of imports. These imports include capital goods which are especially important in contributing to economic growth. The country is enabled to take greater advantage of the international division of labor, procuring desired goods from abroad at considerable savings in terms of imputs of productive factors. This helps increase the efficiency of industry, which is a major factor in economic growth. (2) Export development also tends to concentrate investment in the most efficient sectors of the economy -- those in which the country enjoys a comparative advantage. Specialization in the products in which the country has a comparative advantage increases productivity. (3) The country also gains from economies of scale, since the international market added to the domestic market obviously permits larger-scale operations than does the domestic market alone. (4) The necessity of remaining competitive in international markets tends to maintain pressure on the export industries to keep costs low and to constantly strive for more efficient operations. The competitive pressures also tend to lead to improvements in the quality of the export product, and in general to inhibit the establishment of inefficient export industries.

In addition to direct benefits of providing part of the wherewithal for economic development, and stimulating more efficient use of resources, a dynamic export sector also produces substantial secondary benefits. These include increased investment, consumption and the flow of technology.

Profitable export industries tend to stimulate additional investment, both domestic and foreign. Where exports of a primary product are profitable and expanding, there is a stimulus to domestic investment in both the existing industries and in the various processing industries associated with the product in its various stages of production. Expanding exports also encourage investment in ancillary industries set up to supply and service the operations of the main export industry. 3/

3/ A specific example of this recently would be Peru, where many industries, including boat construction, have been developed to supply and service the relatively new anchovy and fishmeal industry. For a more detailed description of the effects of this major new export for Peru, see "Export Growth and Diversification: The Peruvian Case," by Michael A. Gomez, Board of Governors of the Federal System, May 1964.

A rapid growth in exports also serves as an inducement to foreign investment in the country, particularly where the investment climate is propitious from the viewpoint of foreigners.

In addition to stimulating domestic and foreign investment, a growing export sector also encourages an increased flow of technological and market innovations, as well as managerial skills. Under the pressure of competition and the desire to continue expanding foreign sales, foreign techniques and methods are imported to further improve productivity and quality. This is beneficial for both the domestic exporter and the foreign importer, the latter often pressing for the new techniques in order to improve his own sales and profit position.

Lastly, a growing export sector also serves as an indirect stimulus to increased consumption. As consumers become gradually aware of the foreign consumer products that they can obtain because of expanded export earnings, there is an increased desire to acquire these products. Thus there is a kind of "demonstration effect" wherein individuals decide to increase their expenditures when they become aware of the existence of a larger variety of goods or of superior goods.

All of these factors tend to reinforce each other, stimulating further expansion of exports, investment and consumption. The result is a substantial rate of growth in real gross national product.

Lack of Statistical Studies

Although economists have written quite extensively on the subject of exports and economic growth, there have been relatively few statistical studies undertaken in the postwar period to determine more precisely the role of exports in promoting economic growth. Many economists agree that exports have traditionally played a very important role in promoting growth, but some--probably a minority--have taken issue with this position. The following statement by Dr. Shu-Chin Yang of the World Bank's Economic Development Institute is quite explicit on the subject:

> For most primary exporting countries, exports
> are the major dynamic factor in determining the level
> of general economic activity....In most less developed
> countries, exports are the most important active
> factor in generating economic activity. The slow growth
> of their exports, if not accompanied by the development
> of the home sector, would mean a slow economic growth
> in general. 4/

4/ See "Foreign Trade Problems in Economic Development," Dr. Shu-Chin Yang, Advancement of Science, May 1964, page 31.

This position generally coincides with that of the classical and neo-classical economists. In their view, foreign trade serves as an 'engine of growth,' stimulating a rise in aggregate economic output. This view has been modified by some and denied by others. For example, Gustav Ranis of the International Development Agency believes that "...the less developed economy should treat trade not as an engine of growth but as an additional efficient machine of production at its disposal transforming exports as inputs into imports as outputs." 5/ Others, such as Charles Kindleberger and R.J. Ball, believe there are circumstances under which an increase in exports might lead to a decrease in the rate of economic growth. 6/ This suggestion by Ball has since been refuted by Benton F. Massell 7/ and the Kindleberger case appears to be too rare to be helpful as a guide. Many other economists have also written on the subject of exports and economic growth, 8/ but only Prof. Joseph E. Haring, assisted by Joseph F. Humphrey, appears to have made a statistical study of the subject for more than a few countries.

5/ "Trade, Aid and What?" Gustav Ranis, Kyklos, Vol. 17, Fasc. 2,
    1964, page 194.
6/ "Capital Imports and Economic Development: Paradoxy or Orthodoxy?"
    R. J. Ball, Kyklos, Vol. 15, Fasc. 3, 1962, page 617; and Economic
    Development, Charles P. Kindleberger, McGraw-Hill, New York,
    pp. 245-53. See especially Kindleberger's second case, "Exports
    as a Lagging Sector."
7/ "Exports, Capital Imports and Economic Growth," Benton F. Massell,
    Kyklos, Vol. 17, Fasc. 4, 1964, pp. 627-35.
8/ Other recent articles touching on the relationship of exports and
    economic growth include:
    "Growth and Trade: Some Hypotheses About Long-Term Trends,"
    Richard N. Cooper, Journal of Economic History, December 1964,
    pp. 609-33;
    "The Effects of Industrialization on Exports of Primary-Producing
    Countries," A. Maizels, Kyklos, Vol. 14, Fasc. 1, 1961, pp. 18-46;
    "Foreign Trade and Balanced Growth: The Historical Framework,"
    J. R. T. Hughes, Papers and Proceedings of the 71st Annual Meeting
    of the American Economic Association, May 1959, Vol. XLIX, No. 2,
    pp. 330-58;
    "Export Industrialism and Economic Growth: A Dynamic Model,"
    Joseph E. Haring, Western Economic Journal, Vol. I, April 1963,
    pp. 114-126.
    "Dynamic Trade Theory and Growth in Poor Countries," Joseph E. Haring,
    Kyklos, Vol XVI, Fasc. 3, 1963;
    'International Trade and the Rate of Economic Growth," K. Berrill,
    The Economic History Review, Second Series, Vol XII, No. 3, 1960,
    pp. 351-9;
    "Foreign Trade and Economic Growth: Lessons from Britain and
    France, 1850-1913," C.P. Kindleberger, The Economic History Review,
    December 1961, pp. 289-305; and
    "Patterns of Industrial Growth," Hollis B. Chenery, American
    Economic Review, September 1960, pp. 624-64.

A summary of his paper, which was presented at the 38th Annual Conference of the Western Economic Association, appeared in the spring 1964 issue of the <u>Western Economic Journal</u>. 9/

The data used in the study include GNP in current prices and exports for the years 1950-60. The models consist of least-squares linear regressions fitted to these and other annual data. The conclusion of the study is that these "...simple statistical models reveal that exports can and do act as a leading sector in some developing countries." More specifically, "The simple models developed in the study show that export economies react immediately (using annual data) to changes in exports. Income appears directly related to changes in exports, adding some empirical verification to existing literary theories."

A Testing of the Relationship

In addition to the earlier historical and econometric studies which support the general thesis that export expansion is a major stimulant in promoting economic growth, the results of a statistical correlation and regression analysis undertaken at the Federal Reserve Board also tend to confirm both the suspected relationship and the specific hypothesis detailed earlier. It should be stated, however, that while the statistical results tend to support the hypothesis, they do not completely prove it. The results are offered here only as a further step in support of the hypothesis.

The method used to examine the relation between trade and economic growth was to compile the available annual data for 50 countries on real GNP, exports, and current account earnings. Rates of growth were then calculated for all data, generally for the period from 1953 through 1963, in terms of the average annual rate of change for all years. GNP data were converted to a per capita basis by subtracting the annual rate of population growth from the GNP growth rates. This was done on the theory that population growth itself, especially in agricultural countries, has a strong influence on the rate of growth of GNP. Since rates of population increase differ widely among countries, it was thought desirable to use a growth rate that excluded the influence of a change in population. Trade and current account data were not put on a per capita basis largely because it was felt that there is much less reason to believe that growth of exports reflects increases in population, expecially where the agricultural sector is important.

9/ "Simple Models of Trade Expansion," (Abstract), Joseph E. Haring and Joseph F. Humphery, <u>Western Economic Journal</u>, Spring 1964, pp. 173-4.

A population increase may even result in a decline in exports, as more of the country's agricultural land is devoted to the production of food needed to meet the needs of the expanding population. This may reduce the availability of land for the production of exports. In an economy that is not export-oriented, the population increase may be reflected in increased employment in subsistence farming or services, which have no impact on exports, but which do increase GNP. While an expanding population can contribute to export expansion, it is neither a necessary, nor a sufficient, cause of increased exports. However, a country's policies would have to be very benighted, indeed, for population growth not to be reflected to some extent in the GNP. The relationship will not necessarily be one-for-one, but it was felt that there would be less error in assuming that it would be one-for-one than in pretending that the influence of population on growth was nil.

Since the GNP figures were adjusted for price changes, it was thought desirable to introduce some deflation of the export data. Since the data were in dollar terms, it was obviously not appropriate to use price indexes for the individual countries for this purpose. It was decided to use the U.S. wholesale price index, since this would give at least a rough approximation of the change in the purchasing power of the export earnings of the various countries. It might have been possible to devise more refined deflators using a variety of import or commodity price indexes, but it seems doubtful that the increment in accuracy would be sufficient to justify the additional effort that this would require.

Using the per capita real GNP data and the deflated export and current account earnings data shown in Table 1, multiple correlations and simple least-squares regression equations were then calculated.

Table 1

Selected Growth Rates for 50 Countries: 1953-63 [1]
(in per cent)

		Population Growth Rate [2]	Real GNP Growth Rate	Per Capita GNP Growth Rate [3]	Deflated Export Growth Rate
1.	Argentina	1.7	3.1	1.4	2.9
2.	Australia	2.2	4.0	1.8	4.1
3.	Austria	0.3	5.3	5.0	10.1
4.	Belgium	0.6	2.9	2.3	8.3
5.	Bolivia	2.3	1.6	-0.7	-2.6
6.	Brazil	3.1	6.0	2.9	-0.8
7.	Burma	2.1	5.1	3.0	1.5
8.	Canada	2.5	3.5	1.0	5.0
9.	Ceylon	2.7	3.6	0.9	1.2
10.	Chile	2.3	3.4	1.1	3.4
11.	China (Taiwan)	2.8	6.9	4.1	10.8
12.	Colombia	2.9	4.2	1.3	-2.9
13.	Costa Rica	4.1	4.6	0.5	2.6
14.	Denmark	0.7	4.4	3.7	8.4
15.	Ecuador	3.0	4.2	1.2	4.5
16.	El Salvador	3.2	4.2	1.0	4.6
17.	France	1.2	4.8	3.6	8.7
18.	Germany (Fed. Rep.)	1.2	7.2	6.0	13.5
19.	Guatemala	3.0	4.7	1.7	3.3
20.	Haiti	2.1	1.7	-0.4	-0.7
21.	Honduras	3.3	4.2	0.9	4.0
22.	India	2.4	3.5	1.1	3.6
23.	Indonesia	2.3	2.5	0.2	-1.5
24.	Iraq	1.6	6.4	4.8	7.3
25.	Israel	4.0	10.2	6.2	18.9
26.	Italy	0.6	6.1	5.5	14.5
27.	Jamaica	2.6	7.2	4.6	11.2
28.	Japan	1.0	10.0	9.0	15.7
29.	Korea (Rep. of)	2.9	4.6	1.7	10.6
30.	Mexico	3.1	6.1	3.0	4.5
31.	Netherlands	1.3	4.2	2.9	9.5
32.	Nicaragua	2.9	4.5	1.6	5.5
33.	Norway	0.9	3.4	2.5	7.3
34.	Pakistan	2.6	3.3	0.7	1.2
35.	Panama	3.0	6.7	3.7	5.9
36.	Paraguay	2.2	3.1	0.9	0.8
37.	Peru	2.3	5.4	3.1	10.7
38.	Philippines	3.3	4.9	1.6	6.2
39.	Portugal	0.6	5.0	4.4	5.9
40.	Puerto Rico	0.9	6.4	5.5	11.5

Table 1 (Cont.)

Selected Growth Rates for 50 Countries: 1953-63 [1]
(in per cent)

		Population Growth Rate [2]	Real GNP Growth Rate	Per Capita GNP Growth Rate [3]	Deflated Export Growth Rate
41.	Spain	0.9	5.6	4.7	13.3
42.	Sweden	0.6	3.7	3.1	8.9
43.	Switzerland	1.7	4.6	2.9	8.3
44.	Thailand	3.1	6.1	3.0	5.6
45.	Turkey	2.9	5.1	2.2	1.5
46.	United Arab Republic	2.5	6.6	4.1	3.0
47.	United Kingdom	0.6	2.7	2.1	5.4
48.	United States	1.7	2.9	1.2	5.0
49.	Uruguay	1.6	-0.1	-1.7	-4.2
50.	Venezuela	3.4	6.0	2.6	6.4

[1] Due to lack of GNP data, a shorter period than 1953-63 had to be used for certain countries. These countries, and the respective periods, were as follows: Colombia, 1953-62; Haiti, 1953-60; Honduras, 1953-63; Indonesia, 1953-61; Jamaica, 1953-61; Paraguay, 1953-62; and U.A.R., 1953-60. In addition, data on Jamaican earnings on current account were only available for 1953-61.

[2] Compound annual rate of population growth.

[3] GNP growth rate less population growth rate.

SOURCES: 1964 Yearbook of National Accounts Statistics, United Nations, New York, 1965; Balance of Payments Yearbook, and International Financial Statistics, International Monetary Fund, Washington, D. C.; Monthly Bulletin of Statistics, United Nations; and selected country sources.

Reservations

Before examining the results of the computations, several reservations regarding the data and methodology should be noted. The data used cover only eleven years and not as large a group of countries as might be desirable. In addition, because the computations involve serial correlation, i.e., the use of time series data, there is the problem that some unstated factor (or factors) is actually the cause of the relatively high degree of correlation, rather than the specific factors incorporated in the data. Thus caution is needed in interpreting the results. The equations used have assumed that economic growth is a function of exports and/ or current account earnings, but as indicated earlier there is a fair amount of interdependence between these variables.

Besides the reservations stated above, it should be noted that the computations actually compare rates of change with other rates of change. The significance of the statistical results in such a case is less clear than where the time series of the absolute data are compared. In addition, there is the problem that the relationship between the series may not be linear, which would have the effect of reducing the statistical significance of the correlations.

It should also be recognized that the methodology used in this study is a mixture of both a cross section analysis and a time series analysis. If the former method were used, this would involve an analysis of the data for the 50 countries for, say, one particular year. The latter method would involve the analysis of the annual data for one country over a period of years. For analytical purposes, it was considered preferable to combine the two approaches in the manner indicated.

The Results of the Correlation Analysis

Table 2 presents the main results of the correlation analysis. Several observations may be made on the basis of these calculations.

First, the most significant correlation is between exports and GNP. The correlation of GNP with current account earnings was also high--0.821 as against 0.820 for GNP with exports--but the latter relationship is more statistically significant since it produced an equation with a higher F-ratio. [10] Higher correlations were obtained when current account earnings were correlated with both GNP and exports, and when exports were correlated with both GNP and current account, but these results are not significant since exports are usually a large and important component of current account earnings.

The second observation is that the data indicate that a country increases its per capita real GNP about 1 per cent for every 2-1/2 per cent boost in its exports. This is approximately the relationship indicated by the regression equations. As stated in Table 2, the simple least-squares regression equation of GNP on exports is:

(1) Per capita real GNP = .6630 + .32952 (Exports).
            (1.1557) (.03316)

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[10] The F-ratio is a variance-ratio test widely employed in the variance-analysis to test the homogeneity of a set of means. The test is based on the ratio of two independent statistics, each of which is distributed as the variance in samples from normal populations with the same parent variance.

Table 2

Average of Years

Comparisons	Equation	Multiple Correlation Coef.	Equation F-ratio	Degrees of Freedom Num.	Denom.
1. GNP on Curr. Acct.	Real GNP = .3884 + .34681(Curr.acct.) (1.3291) (.04371)	.75324 R^2 = .57	62.950	1	48
2. GNP on Curr. Acct., Exports	Real GNP = .7491 - .05480(Curr.acct.) + .37429(Exp.) (1.1649) (.10901) (.09511)	.82134 R^2 = .67	48.719	2	47
3. GNP on Exports	Real GNP = .6630 + .32952 (Exports) (1.1557) (.03316)	.82027 R^2 = .67	98.722	1	48
4. GNP on Exports, Curr. Acct.	Real GNP = .7491 +.37429(Exp.) - .05480(Curr.Acct.) (1.1649) (.09511) (.10901)	.82134 R^2 = .67	48.719	2	47
5. Curr. Acct. on GNP	Curr. Acct. = 2.1109 + 1.63596(GNP) (2.8866) (.20619)	.75324 R^2 = .57	62.950	1	48
6. Curr. Acct. on GNP, Exports	Curr. Acct. = 1.6359 - .09761(GNP) + .84899(Exp.) (1.5546) (.19414) (.07799)	.93656 R^2 = .88	167.773	2	47
7. Exports on GNP	Exports = .5594 + 2.04191(GNP) (2.8770) (.20551)	.82027 R^2 = .67	98.722	1	48
8. Exports on GNP, Curr. Acct.	Exports = -1.2208 + .66220(GNP) + .84336(Curr.Acct.) (1.5494) (.16827) (.07747)	.95241 R^2 = .91	229.442	2	47

The data in parentheses indicate the standard error. For the constant term, i.e., 0.6630, the standard error is 1.1557, which is large. Normally the standard error should not exceed one-half of the constant term for the results to be statistically significant. Because of the large standard error, it is not clear where the "true" regression line would intersect the Y-axis. However, this aspect is not too important since it is mainly the dynamic relationship between exports and growth which is of interest, not the precise absolute level. In this regard, the low standard error for the B-term, viz., 0.03316, indicates that the B-coefficient, which is 0.32952, is significant.

In the above calculation the arbitrary assumption is made that all of the variability occurs in the export data, and that there is no variability in the GNP data. Similar calculations were made, taking the opposite assumptions. This produced a regression equation of exports on GNP (line 7 of Table 1) which is:

$$(2) \quad \text{Exports} = .5594 + 2.0419 \text{ (Per capita real GNP)}.$$
$$(2.8770) \quad (.20551)$$

In this equation, it is assumed that all of the variability occurs in the GNP data, and that there is no variability in the export data.

Neither one of these assumptions is realistic, since common sense tells us that economic growth can boost exports and _vice versa_. Therefore, a third regression equation was calculated based on the assumption that there is equal variability for each of the two series. This was based on the previous two equations. This equation, statistically referred to as an orthogonal regression equation, is:

$$(3) \quad \text{Per capita real GNP} = .20 + .4096 \text{ (Exports)}. \text{ [11]}$$

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[11] Stated very briefly, the orthogonal regression equation was calculated by using the mean of the GNP data (viz. 2.59 per cent) and the mean of the export growth data (viz. 5.85 per cent). The reciprocal of the B-term in the equation of exports on GNP (line 7 of Table 2) was calculated and averaged with the B-term for the equation of GNP on exports (line 3 of Table 2), producing a coefficient of 0.4096. The constant term was calculated by substituting the calculated means of 2.59 per cent and 5.85 per cent in the equation of exports on GNP and solving for "a," the constant term. The constant term in the orthogonal regression equation was then obtained by calculating the midpoint between the constant term for the equation of GNP on exports (viz. 0.66) and the constant term for the equation of exports on GNP (viz. 0.27), the result being 0.20.

A regression line based on this equation is the one which has been drawn in Chart 1 which appears on the following page. This line lies between the two extreme regression lines that would be drawn if equations (1) or (2) were used. In essence, the derived equation indicates that for each 1 per cent rise in exports, GNP increases 0.4 per cent, or as stated earlier, GNP increases 1 per cent for every 2-1/2 per cent rise in the rate of exports.

A third observation is that the data indicate that there is a high degree of reliability for the B-term, but not for the constant term. As pointed out earlier, the latter drawback is not serious since it is the relative relationship, and not the absolute level, which is of primary importance. Thus the relationship between the rates of growth of exports and GNP holds, but not necessarily the 0.20 per cent level of GNP at an export rate of growth of zero as indicated in equation (3) above.

A calculation of the standard error of the equation,[12] indicates that it is 1.21. This standard error was calculated only for variation in the GNP data, and not for variation in the export data. However, it is unlikely that calculation for variation in the export data only would significantly alter the results. On the basis of the standard error calculated, there is a 99.7 per cent probability that the "true" regression line will fall within a range of 3 standard errors (i.e., 3.63 percentage points) each side of the regression line plotted in Chart 1. The dotted line in Chart 1 represents only 1 standard error (i.e., 1.21 percentage points) on each side of the regression line, and in this case, there is a 68 per cent probability that the "true" regression line would fall within this range. By actual count, 40 of the 50 observed values in Chart 1 fell within the 68 per cent range.

Some comment should perhaps be made regarding the countries that have fallen outside the range. There are eight of these--Brazil, the U. A. R., Burma, Colombia, Japan, Korea, Portugal and Iraq.

More research would be required to find out why these countries have not conformed to the normal pattern, but the most likely explanations are: (1) poor statistical data; (2) the impact of capital movements; and (3) the impact of invisible accounts in the balance of payments.

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[12] The standard error of the equation $(S_{y,x})$ was calculated from the following equation: $S_{y,x} = \sqrt{\dfrac{(y-y_c)^2}{N}}$,

where y is the observed value, y_c is the calculated value, and N the number of observations.

In the case of Brazil, Burma and the U.A.R., there are grounds for believing that the reported growth rates substantially overstate the "true" rate of growth. In Brazil, for example, there is strong evidence that the GNP data may not have been sufficiently deflated. This problem of incorrect statistics may also apply to other countries, but in the case of these three countries, the excessively high rates are especially evident. With more realistic data, the calculated results would be even more statistically significant. However, there is no doubt that Brazil and perhaps the U.A.R. also experienced for a time at least a high rate of growth of GNP in the face of poor export performance. The U.A.R. had the advantage of large earnings in the form of Suez Canal tolls. Both countries also lived off capital—either their own, or that of other countries—to some degree. They were both forced to curtail economic activity when their reserves were depleted and the inflow of foreign capital was reduced.

Korea is the one country substantially below the range with a high rate of export growth and a relatively low rate of GNP. There are several factors that may account for this. Exports are a small proportion of GNP—approximately 1 per cent—and thus they have not had much of an impact on aggregate output. In addition, the rapid rate of export growth, as measured in percentage terms, is partly because the original base was very small. For many years during the 1950's Korea's annual exports averaged only about $20 million. Also, as exports have risen, U. S. foreign aid has declined and this has probably resulted in a somewhat lower rate of GNP growth than if the aid had continued at earlier levels.

In the case of Japan, the high rate of export growth suggests a very rapid expansion of GNP, but the actual results have been far better than would have been predicted on the basis of the export performance. Substantial and particularly effective use of foreign capital appears to be the most likely explanation for this, but there are probably other factors involved.
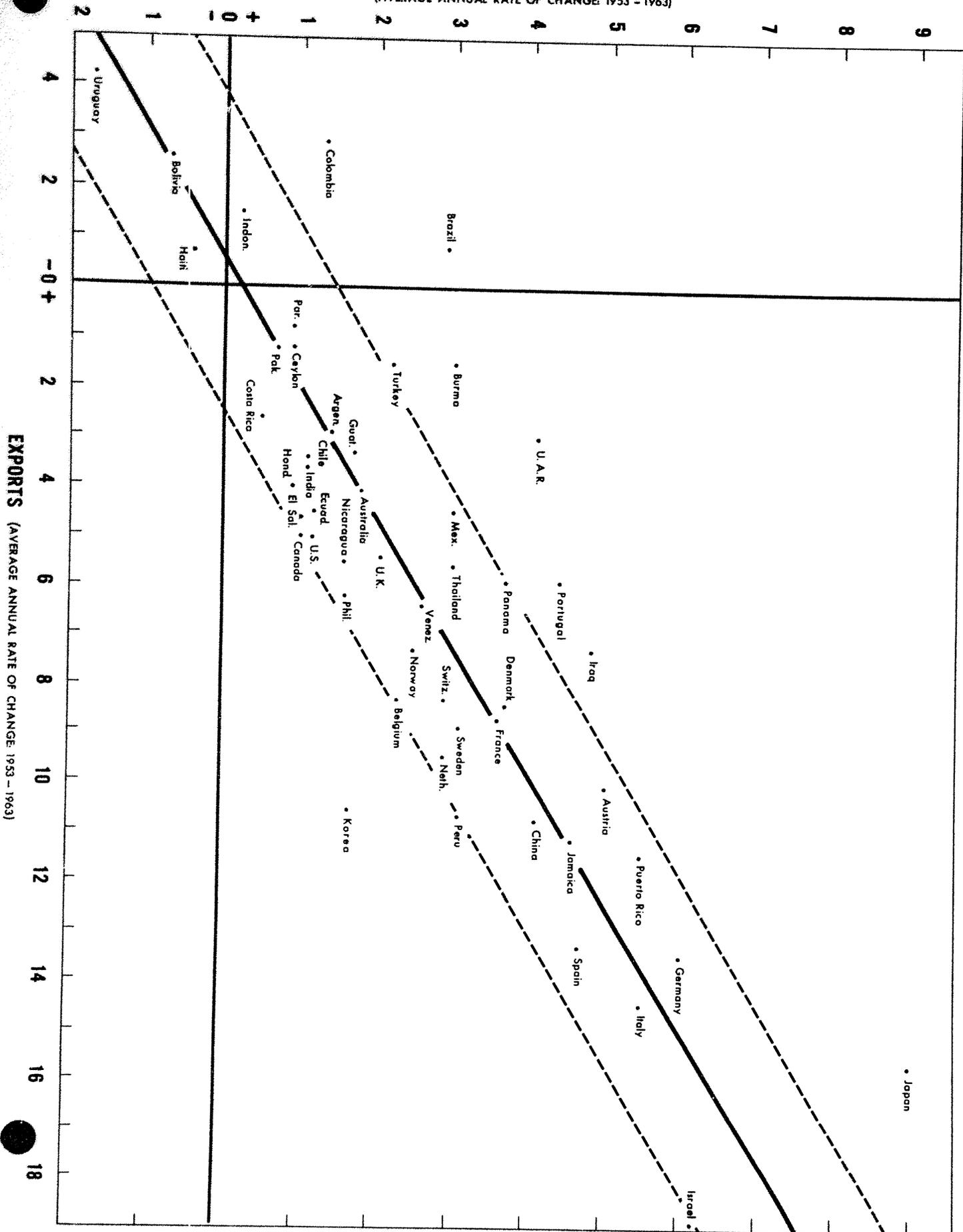
Conclusions

The main conclusion to be drawn from this study is that higher rates of economic growth tend to be associated with higher rates of export growth. Conversely, most countries with low rates of export growth also tend to have, in general, low rates of economic growth. Raising a country's rate of export expansion is not easy, but it would appear from the data that relatively high rates of economic growth are likely to follow from relatively high rates of export growth.

It would appear that as a rule of thumb countries ought to aim at 2.5 per cent expansion of exports to obtain a 1 per cent expansion of per capita real GNP. A country that tries to promote growth while ignoring its export performance may succeed in the short-run, especially if it can count on an inflow of capital or drawing down reserves, but it will be hard-pressed to sustain growth over a longer period of time.

The policy implication of the above conclusion is that countries eager to increase their growth rates should adopt the type of policies that will stimulate exports. This means first and foremost the maintenance of a realistic, if not an undervalued, rate of exchange. This requires maintaining monetary and fiscal stability in order to keep the exchange rate realistic. This is a lesson that might well be incorporated in the self-help criteria for aid-receiving countries.

PER CAPITA REAL GNP
(AVERAGE ANNUAL RATE OF CHANGE 1953 – 1963)

EXPORTS (AVERAGE ANNUAL RATE OF CHANGE 1953 – 1963)

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