

THE VIETNAM WAR AND SOME ASPECTS OF ITS ECONOMIC IMPACT ON ASIAN COUNTRIES

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INTRODUCTION

A LONG WITH its social and political impact, the war in Vietnam has affected in various ways the economies, not only of the U.S. and Vietnam, but of many other Asian countries as well, many of them favorably. For the U.S., the war has been frustrating and divisive, absorbing an enormous amount of the country's resources and inducing a policy of rising domestic prices. In Vietnam, there have been destruction of agricultural land, disruption of economic life, displacement of population, and tragic loss of lives.

Although most war supplies and related commodities are produced at home, escalation of the war has resulted in a sharp increase in U.S. expenditures abroad. These have been directed, not only to Vietnam, but to many neighboring Asian countries. Although these expenditures have been influenced largely by logistic and political considerations, they have in effect stimulated the economic activities of many Asian countries by raising foreign demand for their goods and services and foreign exchange earnings. For some selected Asian countries, the increase in exogenous foreign demand has also come from increased imports by South Vietnam and other countries which affect processing trade patterns. This paper examines these economic effects on those neighboring Asian countries whose economies have been indirectly affected by the war.

The timing and form of cessation of the conflict and the political settlement are still uncertain. But the prospects have improved in the past year or so, and a gradual withdrawal of American troops from Vietnam and other Asian countries has begun. The end of the war would obviously be a turning point in the political, social, and economic life of Vietnam and other Indo-China countries.

The anticipated reconstruction problems of war-torn countries are obvious and pressing, but the inevitable postwar adjustments and shift in priorities which other Asian countries will have to make should not be undermined. That war-related revenues are sensitive to the strategic situation and presence of American troops is evidenced by recent changes in these revenues as a result

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of developments toward peace—a tapering off or decline in some countries. Of course, in the final analysis, internal and external adjustments which each country must make will depend on a number of factors, e.g., nature of the peace settlement, changes in the level of U.S. expenditures, the economic stimulus effected by these expenditures, the level of foreign exchange reserves and export prospects. Although a few implications of the reduction of war-related revenues are made at the end of the paper, analysis of subsequent problems requires more information than presently available.

This paper has three sections. Section I presents the changing level of A) U.S. defense expenditures and briefly B) U.S. government grants to Asian countries in the past several years. That changes are largely due to escalation of the conflict is assumed. Section II examines A) the exports and export patterns of Asian countries, B) their trade with South Vietnam, C) the commodity make-up of these exports, and D) the total production and induced imports required to meet their exports to South Vietnam, compared with the same requirements for their total exports. Examination of D) is made only for Taiwan, Korea, and Japan mainly because of the unavailability of necessary data for other countries, e.g., input-output tables. In Section III the economic and balance-of-payments implications of war-related revenues (exports to South Vietnam and U.S. defense expenditures) are discussed. The secondary income-inducing impact as well as import-inducing effect of these revenues are pointed out but not measured because of the absence of necessary data. Some implications on the reduction of war-related revenues are given at the end of this section.

At the outset some constraints on the analysis of this paper should be mentioned. Available data are extremely scarce and poor in quality. For example, there is no published information on U.S. defense expenditures by country, even for major categories such as construction projects and troop spending. For a few countries, not even total expenditures are available, e.g., Hong Kong which is known to have gained considerably from the spending of American soldiers during visits. Further, given published data, it is difficult to determine the extent to which they represent an effect of war extraneous of other economic forces which would have functioned in the absence of war. Because of these and other reasons, the findings of this paper should be viewed in a qualitative rather than definitive perspective.

I. U.S. EXPENDITURES IN ASIA

Since the mid-1960s, a significant amount of U.S. financial resources and inputs has been injected into Vietnam and other Asian countries to accommodate and sustain the stepped-up military effort in Southeast Asia. The allocation of these expenditures is directly influenced by strategic considerations in meeting the military effort in Southeast Asia as well as the political and security ties between the U.S. and several Asian countries. At the same time, these expenditures, taking such forms as increased demand for goods and services and additional foreign exchange for recipient Asian countries, have significant direct and indirect

economic effects in these as well as other countries. This section examines the size of these expenditures.

A. U.S. Defense Expenditures in Asia

The annual rate of U.S. defense expenditures has run in recent years to about \$80 billion, about \$30 billion more than before the build-up.¹ Almost all of this increase is said to be the annual amount of U.S. defense expenditures directly connected with the Vietnam conflict in recent years.

In assessing the effect on Asian countries, it is useful to distinguish between those U.S. defense expenditures incurred in the U.S. and those incurred abroad since the former are not likely to affect most Asian countries very much whereas the latter do. Although domestic expenditures have greatly exceeded those abroad, the expenditures in Asia have been a major direct source of dollar earnings for many countries. These outlays take many forms, e.g., purchase of local goods and services to be used to construct bridges, air bases, and other military installations; payments of local wages and salaries; and personnel expenditures of U.S. military and civilian personnel and their dependents stationed in these countries and of soldiers visiting on Rest and Recuperation or "R and R."

The total of U.S. defense expenditures abroad (which appears as an item in

TABLE I
U.S. DEFENSE EXPENDITURES ABROAD FOR GOODS AND
SERVICES, BY ASIAN COUNTRIES

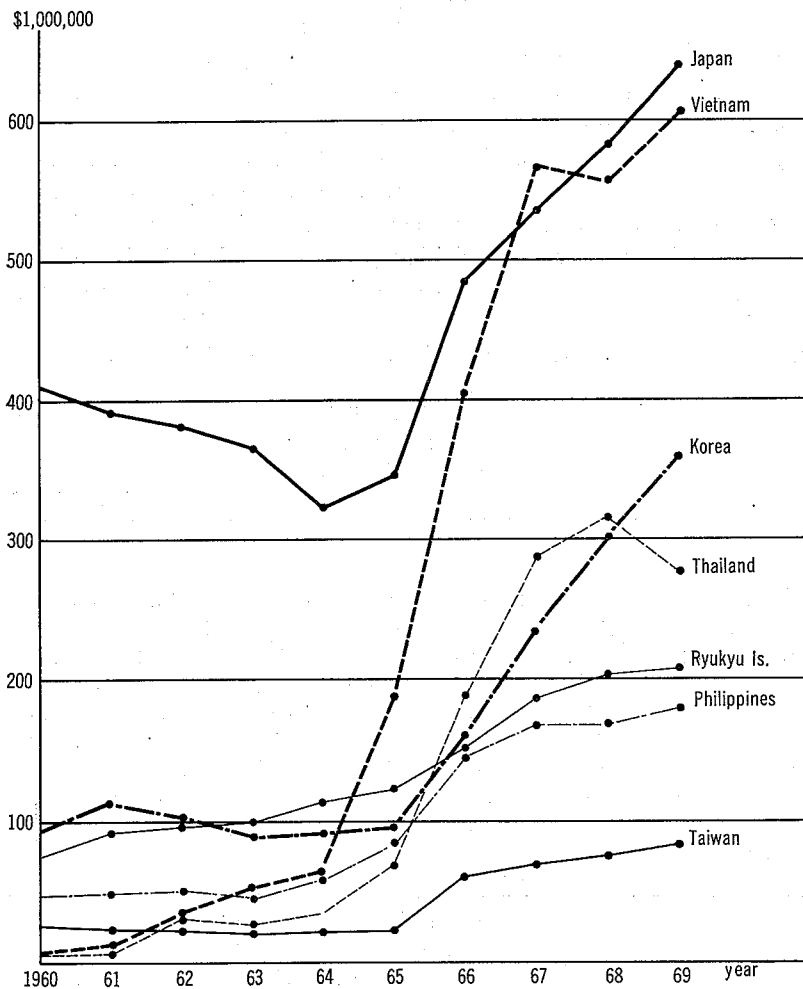
	(Millions of U.S. dollars)						
	Ave. of 1962-63	1964	1965	1966	1967	1968	1969*
U.S. Total	3,033.0	2,880.0	2,952.0	3,764.0	4,378.0	4,530.0	4,824.0
Asian Countries	710.5	704.0	926.0	1,592.0	2,050.0	2,205.0	2,356.0
(% of U.S. Total)	(23.43)	(22.44)	(31.37)	(42.30)	(46.83)	(48.68)	(48.84)
Japan	375.0	321.0	346.0	484.0	538.0	581.0	640.0
Korea	96.5	91.0	97.0	160.0	237.0	301.0	360.0
Philippines	48.5	58.0	81.0	147.0	167.0	169.0	180.0
Ryukyu islands	97.0	115.0	123.0	150.0	188.0	202.0	208.0
Taiwan	21.0	21.0	21.0	60.0	70.0	76.0	84.0
Thailand	28.5	34.0	70.0	183.0	286.0	318.0	278.0
Vietnam	44.5	64.0	188.0	408.0	564.0	558.0	606.0

- Notes: 1. Expenditure values have been taken from [13, Table 2, p. 44]. In this source, Asian countries are listed under "Other Countries" along with a few countries in the Middle East and "Other and unallocated." A part of the latter entry (e.g., \$129 million in 1968) might have been allocated to some Asian countries not listed in the table.
2. Defense expenditures to Vietnam prior to 1963 (e.g., \$37 million in 1962) includes Cambodia and Laos.
3. (*) 1969 figures refer to the annual value based on the first half of the year.

¹ For a description of these expenditures, see [13, pp. 40-47].

the U.S. balance-of-payments) is given in Table I by country.² The total in 1969 exceeded \$4.8 billion compared with \$2.88 billion in 1964, the year of the Tonkin Resolution—a rise of about \$2 billion. Most or more than four-fifths of this increase went to Vietnam and six other Asian countries, namely Japan, Thailand, Korea, Ryukyu, the Philippines, and Taiwan. Currently, about 50 per cent of the total of these expenditures is being spent for the goods and services of these Asian countries in contrast with 22.4 per cent in 1964. The

Fig. 1. U.S. Defense Expenditures in Asia



² In addition, a few relevant items in the balance-of-payments of Asian countries are also listed in Appendix Table I. They are 1) Government, n.i.e. which covers U.S. military and related expenditures, 2) "Travel" which includes "R and R" spending and 3) "U.S. Government Grants" of both military and non-military goods and services. U.S. expenditures shown in Table I are therefore presumably included in items 1 and 2 of Asian countries, though a strict comparison cannot be made between the two sources.

total value of these expenditures in Asia in recent years is understated since a few other countries not listed in the table are also known to have received such expenditures under contract by U.S. agencies, data for which is not published. For example, a number of cities in Asia were or are being used as "R and R" centers, including not only Bangkok, Tokyo, Taipei, and Manila, but also Hong Kong, Singapore, Kuala Lumpur, and Penang (also Sidney).³

Defense expenditures of the seven countries listed in Table I are plotted in Figure 1 which extends from 1960. Considerable variation is observable in the size and increase of these expenditures among the countries, Japan and Vietnam having the largest, followed by Korea and Thailand, and lastly Taiwan. In general, yearly increases were greatest in 1966 and 1967, tapering off considerably since then. For Thailand, where several major construction projects are reported to have been completed, an absolute decline is shown for 1969, though the amount is still large compared with that in the first half of the 1960s.

These expenditures, however, do not comprise dollar earnings for some countries due to the particular accounting procedures used.⁴ For example, some U.S. purchases are paid for by Asian currencies accumulated previously by the U.S. government, e.g., counter part funds. Also, outlays for petroleum are charged to the location where titles are transferred by the military agencies rather than to the locale of the refinery. Consequently, figures for Vietnam and Thailand are said to be overstated [13, p. 44].

With these qualifications in mind, let us consider the additional gross earnings that these Asian countries have received from Vietnam-related U.S. military expenditures. As mentioned earlier, stepped-up military effort in Vietnam began in late 1964 and especially 1965 (the number of American troops rose from around 23,300 to about 184,000 in 1964 and to about 380,000 by the end of 1965, reaching a peak of over half a million in 1968 and early 1969, and declining since). Hence, it seems safe to assume that increases in U.S. expenditures in recent years over the levels of the mid-1960s have been connected with hostilities in Southeast Asia.

Accepting this assumption, the average value of 1964 and 1965 is taken as the base level of U.S. expenditures—the level we assume would have been maintained had there been no intensified war activities. The four-year sum of yearly differences (1966 to 1969) over this base level is as follows for the individual countries (in million dollars):

South Vietnam	\$1,254
Japan	909

³ It is reported that earnings from visits by American servicemen on leave, including those on "R and R," exceeded \$65 million and that ships were repaired in Singapore [5, p. 4].

⁴ Measuring these expenditures from the balance of payments of Asian countries, however, is found to be even more difficult. Both "Government, n.i.e." and especially "Travel" include sources of receipts other than U.S. defense expenditures, necessitating assumptions, e.g., the proportion of "Travel" accounted for by "R and R" spendings. In a study made by the Bank of Thailand, the estimate of these expenditures is based on one-third of "Travel" receipts since 1966 and all U.S. military transactions, a sub-item of "Government, n.i.e." [3].

Thailand	857
Korea	591
Philippines	385
Ryukyu	272
Taiwan	206
<hr/> Total	<hr/> \$4,474

As a result of the war, it is estimated that an average annual expenditure in excess of \$1.1 billion has been injected into the economies of these seven Asian countries.

Since these estimates depend critically on the base level, the biases in these measurements should be mentioned. As shown in Figure 1, expenditures for most countries increased considerably in 1965 when initial military step-up was in full swing. Average base level figures, therefore, are inherently influenced upward and biases estimates of the four-year gross earnings downward. American defense spendings in Japan declined steadily until 1964 (from the Korean War period) and probably would have continued this trend. Instead, as a result of the intensification of the conflict, an upturn occurred (see Figure 1). Hence gross expenditures for Japan which can be attributed to the conflict may very well be larger than the \$909 million given earlier.

There is no doubt that the increased military spending in these countries has been largely for the support of military operations in Vietnam, but it can be argued that some of the increase is also attributable to other problems, e.g., subversive activities in Thailand, the Pueblo incident in Korea. If one can assume an element of independence in the occurrence of such problems, the estimate of Vietnam-related defense expenditures given earlier would be somewhat overstated.

B. U.S. Government Grants

Another direct source of receipts related to the conflict is American grants of goods and services, especially military grants. Grant values, including transfers of both military and non-military goods and services, are listed in Table II as reported in the balance-of-payments of six Asian countries (comparable balance of payments data are not available for Ryukyu).

As expected, U.S. grants to Vietnam have been very large, even larger than U.S. defense expenditures for most years, and have risen sharply since the early 1960s. They amounted to about \$420 million in 1966 and \$462 million in 1967 in comparison with the average annual value of \$160 million in 1962-63. However, for other Asian countries, the dollar value of similar expenditures have risen little or declined, and with the exception of Korea, U.S. grants to these countries are very small compared to receipts of military expenditures. One can therefore conclude that the increased invisible receipts of Asian countries from direct sources related to hostilities in Southeast Asia have mainly come not from U.S. grants but from U.S. defense expenditures.

TABLE II
U.S. GOVERNMENT GRANTS
(In million dollars)

	Average years of		
	1962-63	1964-65	1966-67
Vietnam, Republic of	159.8	217.8	441.1
Korea*	205.1	139.1	130.3
Thailand	28.9	18.0	29.5
Taiwan	39.5	17.6	3.5
Philippines	3.4	2.5	6.0
Japan	0.9	2.0	5.0
Total	437.6	397.0	615.4

Source: Appendix Table I.

* Refers to receipts from "Central Government." Its sub-item, "U.S. Government Grants," are not separately given.

II. IMPACT ON EXPORTS AND PRODUCTION

The conflict in Vietnam has affected considerably the trade and trade patterns of Asian countries. In South Vietnam, exports declined with sharply rising imports. Although the demand for materials, supplies, and goods is largely met by U.S. military agencies, commercial imports have been increasingly supplied by many Asian countries, thereby contributing to the export expansion of these countries. However, these countries' direct exports to South Vietnam which are generally far smaller than their receipts from U.S. expenditures are only one aspect of the trade effect of the war. Their exports to and imports from other countries have also been affected, both directly and indirectly, by such factors as increasing demand for goods and services by the U.S. military and the capacity of individual countries to respond to that demand.

The export expansion of individual Asian countries varies greatly, whether in terms of exports to Vietnam, the U.S., or other countries. In assessing the war's impact on these exports, this section examines, though qualitatively at best, these individual countries' total exports, exports to Vietnam, and commodity patterns of exports. This is followed by the measurement of production linkages and induced import requirements for exports of certain of these countries.

A. Pattern of Total Exports

In Table III, total export values of Asian countries for two average periods, 1962-63 and 1966-67 (one prior to the escalation of the conflict and the other covering the most recent years for which data are available for all countries) are presented alongside their exports to the U.S., Japan, and "Other" Asia.

Referring to total exports of the individual countries (row 1), a great variation is noticeable among them. As expected for Vietnam, the dislocation and disruption of its economic activities are reflected in a sharp fall in exports: from

TABLE III
EXPORT DIRECTION AND GROWTH OF SELECTED ECAFE COUNTRIES,
AVERAGES OF 1962-63 AND 1966-67

Countries	Average Export Value in Million U.S. Dollars		Direction in %		Expansion 1966-67
	1962-63	1966-67	1962-63	1966-67	1962-63
Taiwan					
Total	272.4	588.5	100.00	100.00	2.1604
U.S.	53.6	144.6	19.68	24.57	2.6978
Japan	78.7	121.4	28.89	20.63	1.5426
Other Asia	98.8	204.6	36.27	34.77	2.0709
Korea, Republic of					
Total	70.7	285.0	100.00	100.00	4.0311
U.S.	18.2	116.7	25.74	40.95	6.4121
Japan	24.2	75.2	34.23	26.39	3.1074
Other Asia	20.6	40.2	29.14	14.11	1.9515
Japan					
Total	5,183.4	10,109.7	100.00	100.00	1.9504
U.S.	1,466.5	3,029.3	28.29	29.96	2.0657
Other Asia	1,564.7	2,779.7	30.19	27.50	1.7765
Philippines					
Total	640.8	827.7	100.00	100.00	1.2917
U.S.	305.6	341.7	47.69	41.28	1.1181
Japan	167.2	276.2	26.09	33.37	1.6519
Other Asia	24.7	58.1	3.85	7.02	2.3522
Thailand					
Total	457.3	689.0	100.00	100.00	1.5067
U.S.	37.2	71.9	8.13	10.44	1.9328
Japan	73.6	145.0	16.09	21.04	1.9701
Other Asia	226.2	297.6	49.46	43.19	1.3156
Hong Kong					
Total	839.4	1,425.9	100.00	100.00	1.6987
U.S.	167.9	416.2	20.00	29.19	2.4789
Japan	46.0	82.4	5.48	5.78	1.7913
Other Asia	217.3	312.3	25.89	21.90	1.4372
Malaysia*					
Total	870.7	1,016.3	100.00	100.00	1.1672
U.S.	126.2	165.8	14.49	16.31	1.3138
Japan	124.3	131.3	14.28	12.92	1.0563
Other Asia	223.0	290.3	25.61	28.56	1.3018
Singapore†					
Total	1,125.6	1,121.2	100.00	100.00	0.9961
U.S.	84.2	66.3	7.48	5.91	0.7874
Japan	48.5	45.7	4.31	4.08	0.9423
Other Asia	601.2	602.6	53.41	53.75	1.0023
India					
Total	1,513.6	1,609.3	100.00	100.00	1.0632
U.S.	255.4	293.0	16.87	18.21	1.1472
Japan	90.9	158.3	6.01	9.84	1.7415
Other Asia	152.5	125.2	10.08	7.78	0.8210

TABLE III (Continued)

Countries	Average Export Value in Million U.S. Dollars		Direction in %		Expansion 1966-67
	1962-63	1966-67	1962-63	1966-67	1962-63
Pakistan					
Total	427.2	599.5	100.00	100.00	1.4033
U.S.	40.8	74.7	9.55	12.46	1.8309
Japan	32.7	30.2	7.65	5.04	0.9235
Other Asia	74.8	90.6	17.51	15.11	1.2112
Cambodia					
Total	71.7	75.3	100.00	100.00	1.0502
U.S.	6.4	1.6	8.93	2.12	0.2500
Japan	1.4	3.7	1.95	4.91	2.6429
Other Asia	20.5	28.4	28.59	37.72	1.3854
Vietnam, Republic of					
Total	65.1	20.3	100.00	100.00	0.3118
U.S.	1.5	0.7	2.30	3.45	0.4667
Japan	3.6	2.9	5.53	14.29	0.8056
Other Asia	18.9	1.5	29.03	7.39	0.0794

Sources: Except for Malaysia and Singapore, data are from [9] [10]. Data for Malaysia and Singapore are from [15].

* For Malaysia, average of 1965-66 is used due to the unavailability of comparable data.

† Singapore's total exports and exports to other Asia for 1966-67 and 1963 do not include her trade with Indonesia.

\$65 million in 1962-63 to \$20 million in 1966-67.⁵ Export expansion has been striking for the East Asian countries of Korea, Taiwan, Hong Kong, and Japan, with Thailand and Pakistan following close behind. Stagnant export performances are shown for India, Malaysia, and Cambodia.⁶ Also, other countries not listed here have poor export performances, i.e., total exports of Burma and Ceylon declined absolutely for the same years compared as in Table III. Most of these countries rely largely on exports of primary products. This poor performance which continued even after the escalation of the Vietnam conflict is certainly a sharp contrast to the unexpected increases in prices and primary exports of Asian countries during the Korean War.

For all the East Asian countries, the U.S. has served as the single largest market for their exports in recent years. In 1966-67, the proportion of their total exports directed to the U.S. ranged from 40.9 per cent for Korea to 24.5

⁵ Vietnam's commercial imports rose from \$262 million in 1962 to \$538 million in 1967. [9] and [10].

⁶ An absolute decline is also shown for Singapore, but closer examination shows this decline may not be "real." A large portion of its trade consists of entrepot trade influenced greatly by political and diplomatic factors during the years considered in Table III. For example, such events as Indonesia's "confrontation" policy under the Sukarno regime and Singapore's separation from Malaysia in 1965 reduced the role of Singapore as entrepot trade center in this area. Her trade relations with Indonesia has now improved greatly, but the trade figure for recent years is not published and not included in the total.

per cent for Taiwan. In the two periods compared in the table, their exports to the U.S. grew remarkably (from doubling for Japan to more than a sixfold increase for Korea) and faster than their total exports. The impressive export records of these countries thus has been greatly affected by the ability of these countries to expand their exports to the U.S.

The war's effect on the exports of these countries varies from country to country. One might expect, for example, that the indirect effects of greater U.S. imports would affect Japan's exports more than that of other Asian countries, considering its greater capacity to export capital and intermediate products.⁷ But it is difficult to determine quantitatively the extent to which the export expansion of East Asian countries is attributable to indirect and repercussion effects of the war which raise U.S. imports. These countries have been pursuing intensive export promotion measures and policies, and export growth is not a new phenomenon to them but a continuation of what was taking place before the escalation of the war. It is likely, therefore, that "natural" economic forces have been the main factor behind the expansion of their total exports, the effect of the war playing a contributing role.

This is similarly applicable to the case of Asian countries' exports to Vietnam which is discussed below. Given Vietnam's increased import demand, the productive capacity and ability of individual countries to respond to the demand would, along with other factors, affect the performance of their exports in this market.

B. *Exports to Vietnam*

One characteristic of trade of developing Asian countries has been a tendency of declining intra-regional trade. This phenomenon is indicated by a fall in the share of Asian countries' exports directed to "Other" Asia with a few exceptional countries (see columns 3 and 4, Table III). A sharp contrast is revealed when their exports to Vietnam are compared with intra-regional exports. In three or four years since the escalation of the conflict, exports to Vietnam have increased many times for Korea, Hong Kong, Thailand, Taiwan, Singapore, the Philippines, Malaysia, and Japan as shown in Table IV. Even in other Asian countries listed, with the exception of Cambodia, exports to Vietnam have increased faster than total exports. A relatively rapid increase of exports to Vietnam is therefore not confined to East Asian countries but is extended to almost all Asian countries.

Korea, Thailand, Hong Kong, and Malaysia lead other Asian countries with a

⁷ It has been mentioned in Section I that U.S. defense expenditures at home connected with the Vietnam War far exceed those abroad. Two likely indirect effects emerge in the U.S. from the former spendings which are favorable to the balance-of-payments position of foreign countries at the expense of the U.S. These two are 1) increased demand for imports of parts and materials arising from the increased production of military supplies, materials, and services and 2) a decrease in U.S. exports and increase in imports, and a general slowdown of U.S. competitiveness in the world market, resulting from the diversion of resources for military purposes and the inflationary effect produced by it. It is reported by Leonard Dudley and Peter Passess that their "best" estimate of these two effects on current accounts of the U.S. balance-of-payments in 1967 is \$1.12 billion for 1) and \$1.29 billion for 2) in [4, pp. 437-42].

TABLE IV
EXPORTS TO VIETNAM BY ASIAN COUNTRIES

	Exports				Increase in % $5\left(\frac{2-1}{1}\right)$	Exports to Vietnam as a % of Total Exports	
	Million U.S.\$		%			1962-63 6	1966-67 7
	1962-63 1	1966-67 2	1962-63 3	1966-67 4			
Total of Asian Countries	103.8	385.8	100.00	100.00	272	0.90	2.10
Japan	46.7	156.5	44.99	40.57	235	0.90	1.55
Taiwan	26.4	79.1	25.43	20.50	200	9.69	13.44
Korea	1.0	10.7	0.96	2.77	970	1.41	3.75
Philippines	0.6	2.1	0.58	0.54	250	0.09	0.25
Thailand	2.0	14.7	1.93	3.81	635	0.44	2.13
Hong Kong	2.9	21.0	2.79	5.44	624	0.35	1.47
Malaysia	0.0	3.4	0.0	0.88		0.0	0.33
Singapore	18.8	91.8	18.11	23.79	388	1.67	8.19
India	3.5	5.0	3.37	1.30	43	0.23	0.31
Pakistan	0.6	1.0	0.58	0.26	67	0.14	0.17
Cambodia	1.3	0.5	1.25	0.13	-62	1.81	0.66

Source: See Table III.

rate of increase in excess of 600 per cent (see column 5, Table IV). But in terms of absolute value, Japan ranks first with exports to Vietnam exceeding 40 per cent of total Asian exports, followed by Singapore with 23.79 per cent and Taiwan with 20.5 per cent (column 4, Table IV).⁸ The export shares for other Asian countries are much smaller than those for the above three, e.g., the fourth largest exports of Hong Kong comprise only 5.4 per cent.

For individual countries, the degree of internal and external economic adjustments necessitated by possible declines of exports is likely to be directly related to the size of their exports to Vietnam relative to total exports. The larger the exports, the greater their contribution to the expansion of total exports.

Although increases in Asian exports to Vietnam have been abnormally rapid, the amounts have been small except for a few countries. Taiwan's exports to Vietnam as a percentage of its total exports was 13.4 per cent in 1966-67, the highest among Asian countries. This was a rise from 9.7 per cent in 1962-63 and only 3.8 per cent in 1960-61. Singapore's 8.2 per cent in 1966-67 was a rise from only 1.8 per cent in 1962-63. Korea's 3.5 per cent in 1966-67 was considerably smaller than that of Taiwan and Singapore, but the country's reliance on the Vietnam market was larger a few years prior with a peak share of 8.5 per cent in 1965 rising from virtually no exports before 1963. For the remaining

⁸ When all countries are considered, the U.S. has been the largest exporter, followed by Japan. Measured in terms of Vietnam's total imports in 1966-67, the U.S. supplied 36 per cent, Japan 21 per cent, and other Asian countries together 25 per cent. Hence more than four-fifths of Vietnam's total imports came from the U.S. and Asian countries. Common Market countries supplied about 11 per cent in 1966-67 which was a decline from as much as one-third in the early 1960s.

Asian countries, exports to Vietnam have been relatively small, with percentages ranging from 2.1 per cent for Thailand and 1.5 per cent for Hong Kong to less than one-fifth of 1 per cent for Pakistan. Although more than 40 per cent of total Asian exports to Vietnam in 1966-67 came from Japan, this constituted only 1.6 per cent of Japan's total exports (in the case of the U.S., this was less than 1 per cent).

C. *Commodity Composition*

The comparative smallness of the Vietnam market does not fairly reflect the extent to which it has stimulated certain exports from some developing Asian countries. In general, these countries' exports to Vietnam differ substantially from that normally exported to the rest of the world, that is, many export items are directed largely to the Vietnam market.

Patterns of commodity exports to Vietnam can be seen from Table V. For purposes of simplification, only those products which constitute a relatively large percentage of a country's exports are listed. For Taiwan, Korea, and Japan, the 3-digit SITC (Standard International Trade Classification) items have been consolidated to correspond to sectors of each country's inter-industry classification, using average export values of 1966 and 1967.⁹ Figures for the remaining countries are shown in terms of the SITC for 1966 or 1967, the year for which data are available.

Consider first the product mix or commodity composition of these countries' exports to Vietnam as compared to that of their total exports (columns 1 and 2, Table V). For most countries, a pronounced difference is noticeable between the types of commodities normally exported (total) and that exported to Vietnam. For Taiwan, for example, those items listed together comprise 83.08 per cent of the exports to Vietnam (column 1) but only 28.65 per cent of total exports (column 2). The difference between the two percentages is even larger for some other countries, e.g., Korea (87.3 per cent compared to 18.6 per cent).

Within this general picture, the product mix of individual countries varies. For example, exports of both Thailand and Malaysia are heavily concentrated in one or two primary products, particularly rice for Thailand (74.66 per cent) and petroleum products for Malaysia (92.36 per cent). Whereas the Philippines and Pakistan also export a very limited number of items, almost all of Pakistan's and more than half of the Philippines' are manufactured products. Unlike these four countries, Taiwan, Korea, Hong Kong, Singapore, and Japan ship numerous industrial goods to Vietnam. Singapore's exports to Vietnam consist largely of petroleum products (89 per cent of its Vietnam total) but also include many other items. Hong Kong's and Japan's exports to Vietnam do not differ from their normal exports as much as that of other countries.

The export patterns of Taiwan and Korea can be singled out as unique in

⁹ This has been done to make the classification the same as the one used in the following section where these countries are further analyzed. Typically, more than one 3-digit SITC item have been grouped under a given input-output sector. The sources of the inter-industry classification used here are given in Table VI.

TABLE V
THE COMMODITY COMPOSITION OF EXPORTS TO VIETNAM AND OF TOTAL
EXPORTS AND THE SHARE OF EXPORTS TO VIETNAM FOR
SELECTED ASIAN COUNTRIES (in %)

Country (Year) SITC or I-O Sector	Description	Commodity Composi- tion of Exports to		Exports to Vietnam as a % of Total (3)
		Vietnam (1)	Total (2)	
Taiwan (Ave. of 1966 and 1967)				
Total				
(Million \$)		(61.1)	(483.2)	1.77
%		100.00	100.00	
Subtotal		83.08	28.65	
I-O 15	Sugar	10.60	9.96	13.54
23	Artif. Fibre	11.68	5.87	25.14
27	Pulp, Paper	6.16	2.29	34.00
29	Rubber and Prod.	1.29	0.48	33.60
30	Chem. Fert.	6.17	1.05	74.56
34	Other Chem. Prod.	4.56	2.15	26.80
35	Cement	25.93	3.84	85.31
39	Iron and Steel	0.88	0.15	72.48
42	Aluminum Prod.	2.42	0.67	45.58
44	Machinery	9.40	2.50	47.45
45	Elect. Machinery	5.11	2.03	31.74
46	Transport. Equip.	1.90	0.66	36.50
Korea (Ave. of 1966 and 1967)				
Total				
(Million \$)		(9.7)	(282.9)	3.41
%		100.00	100.00	
Subtotal		87.27	18.60	
I-O 2	Other Agric.	5.19	13.55	1.31
8	Beverages	1.70	0.13	44.20
16	Printing and Publ.	1.50	0.16	32.84
20	Other Chem. Prod.	0.53	0.04	40.87
26	Steel Prod.	45.87	1.66	94.29
29	Non-elect. Mach.	15.53	1.30	40.77
31	Transport. Equip.	9.50	0.63	51.75
24	Glass, Clay, Stone	3.91	0.40	32.98
27	Non-Ferrous Metals	3.54	0.73	16.53
Japan (Ave. of 1966 and 1967)				
Total				
(Million \$)		(9,745.7)	(146.9)	0.15
%		100.00	100.00	
Subtotal		79.09	54.59	
I-O 16	Beverages	0.15	0.03	6.51
20	Fabric and Textiles	13.76	6.97	2.98
31	Petroleum Prod.	1.60	0.31	7.78
38	General Machinery	8.80	8.24	1.16
39	Elect. Machinery	19.05	10.96	2.62
40	Transport. Mach.	15.33	17.17	1.35
41	Medic., Optical Mach.	11.85	3.70	4.83
42	Misc. Manufactures	8.55	7.21	1.79

TABLE V (Continued)

Country (Year) SITC or I-O Sector	Description	Commodity Composi- tion of Exports to		Exports to Vietnam as a % of Total (3)
		Vietnam (1)	Total (2)	
Hong Kong (1967)				
Total				
(Million \$)		(10.1)	(1,163.1)	0.87
%		100.00	100.00	
Subtotal		74.41	40.10	
SITC 541	Medical Products	2.05	0.36	4.94
651	Textile Yarn, Thread	4.95	1.31	3.29
684	Aluminum	5.58	0.21	23.28
698	Metal Manuf., n.e.s.	2.54	1.04	2.13
719	Non-Elect. Mach., n.e.s.	2.81	0.35	6.95
725	Telecomm. Apparatus	1.89	0.35	4.73
821	Furniture	16.96	0.87	16.98
841	Clothing	26.42	34.29	0.67
842	Fur Cloth., Articles	6.58	0.06	93.94
864	Watches, Clocks	2.22	0.65	2.98
892	Printed Matter	2.41	0.61	3.42
Singapore (1967)				
Total				
(Million \$)		(99.7)	(1,140.3)	8.74
%		100.00	100.00	
Subtotal		94.64	28.28	
SITC 061	Sugar and Honey	0.67	0.25	23.50
221	Oil-seeds, etc.	0.57	0.52	11.09
332	Petroleum Prod.	88.89	25.67	30.28
341	Gas, Natural and Manuf.	0.11	0.04	24.45
632	Wood Manuf., n.e.s.	0.10	0.06	14.72
691	Finished Struct. Parts	1.75	0.28	53.92
692	Metal Containers	0.94	0.65	12.58
723	Elect. Distr. Equip.	0.13	0.08	14.03
724	Telecomm. Apparatus	0.40	0.32	11.16
821	Furniture	0.47	0.21	19.17
862	Photographic Supplies	0.40	0.12	28.87
863	Cinema Film	0.21	0.08	22.58
Thailand (1966)				
Total				
(Million \$)		(11.7)	(662.1)	1.77
%		100.00	100.00	
Subtotal		97.12	30.79	
SITC 001	Live Animals	6.41	0.84	13.44
042	Rice	74.66	28.99	4.54
061	Sugar and Honey	14.54	0.84	28.27
661	Lime, Cement, etc.	1.51	0.12	21.76
Malaysia (1966)				
Total				
(Million \$)		(3.9)	(1,019.0)	0.38
%		100.00	100.00	

TABLE V (Continued)

Country (Year) SITC or I-O Sector	Description	Commodity Composi- tion of Exports to		Exports to Vietnam as a % of Total (3)
		Vietnam (1)	Total (2)	
Subtotal		97.21	26.76	
SITC 332	Petroleum Prod.	92.36	1.78	19.83
687	Tin	4.85	24.98	0.07
Philippines (1966)				
Total				
(Million \$)		(1.3)	(837.6)	0.16
%		100.00	100.00	
Subtotal		80.90	1.66	
SITC 112	Alcoholic Beverages	24.42	0.14	25.56
3*	Mineral Fuels	8.59	1.11	
5*	Chemicals	14.00	0.37	5.69
674	Iron and Steel Sheets	33.89	0.05	100.00
Pakistan (1966)				
Total				
(Million \$)		(1.5)	(600.8)	0.25
%		100.00	100.00	
Subtotal		93.16	13.31	
SITC 541	Medical Prod.	14.00	0.21	16.89
641	Paper and Paperboard	45.89	0.23	50.43
656	Made-up Textile Articles, n.e.s.	23.80	12.74	0.47
711	Power Generating Machinery	9.47	0.13	17.78

Source: [15].

* Three-digit breakdown for one-digit SITC's 3 and 5 are not given.

that they exhibit a strong tendency for new industrial products. As discussed in Section II-A, both Taiwan's and Korea's total exports have expanded markedly. Manufactured exports have been a "dynamic" source of their favorable export growth. They consist largely of products generally classified as labor-intensive light industrial, e.g., cotton textile goods, plywood, plastic products, and wigs. What is prominent among their export-products to Vietnam, however, is quite different—products of relatively heavy industrial origin, e.g., "Cement," "Steel Products," "Machinery," and "Transport Equipment."

The importance of Vietnam's market for most of the products listed is even more evident when proportionate share of each export directed to Vietnam is considered (column 3). For example, for Taiwan 85.31 per cent of total exports of "Cement," 74.56 per cent of "Chemical Fertilizer," 72.5 per cent of "Iron and Steel," and about one-half of "Machinery" have been directed to Vietnam. For Korea, Vietnam exports have absorbed 94.3 per cent of "Steel Products," 51.75 per cent of "Transport Equipment," and 40.9 per cent of "Other Chemical Products."

When specific products are considered, the importance of the Vietnam market extends beyond Taiwan and Korea. For example, all of the Philippine's "Sheets of Iron and Steel" went to Vietnam, 50.4 per cent of Pakistan's "Paper and

Paperboard," 54 per cent of Singapore's "Finished Structural Parts," and 94 per cent of Hong Kong's "Fur Clothing and Artificial Fur, etc." But the number and "significance" of these items are much less than those of Taiwan and Korea. In the case of Japan, dependence on specific export items to Vietnam is extremely small, the highest export share being 7.8 per cent for petroleum products.

D. Production Requirements of Exports

It is well known that a change in the level of output of a given sector has an effect upon the rate of production in all other sectors due to the inter-industry linkage or inter-dependent nature of production processes. Production of machinery for export purposes, for example, would require various inputs such as steel sheets and bars and, therefore, indirectly stimulate production of these inputs. The value of gross production generated for a given amount or set of exports would, therefore, be larger than the value of exports. Also, if needed inputs are not readily available at home, imports become necessary. Such imports may be considerable when export demand for new industrial products is stimulated.

In analyzing production linkage and import-inducing effects associated with exports to Vietnam, three countries have been selected: Japan, Taiwan and Korea. Although this selection was largely dictated by the availability of input-output data of recent years for these countries, they seem very appropriate for such analysis. Japan and Taiwan are two of the largest exporters to Vietnam. And, as mentioned earlier, patterns of Taiwan's and Korea's exports to Vietnam indicate most clearly the stimulating impact that this market has had on their industrial and new export products. Further, analysis of one highly developed and two less-developed but rapidly industrializing countries should provide interesting comparisons.

Gross supply and other requirements of the individual sectors of each country are computed both for exports to Vietnam and total exports for the purpose of comparison, using average export values of 1966 and 1967. The summary results of these computations are presented in Table VI.¹⁰

The gross supply of goods and services used to meet these countries' exports is shown to be considerably greater than the values of these exports (rows 1 and 2). For example, Taiwan's \$61 million worth of goods exported to Vietnam has used \$134.5 million in total supply of goods and services; Korea's \$9.7 million generated \$16.3 million. The supply-export ratio is 2.2 for Taiwan, 1.7 for Korea, and the largest 2.4 for Japan (row 5). For each country, virtually identical values of these ratios are shown for the supply effect of total exports and exports to Vietnam, e.g., for Taiwan 2.1 for the former and 2.2 for the latter. Differences in these ratios among the countries appear to be in line with their varying stages of economic development and structure. One would expect, for instance, a greater linkage effect for Japan than for Taiwan and Korea.

The gross supply of goods and services affected by exports have two different

¹⁰ Computational results on individual sectors may be obtained from the author by request.

TABLE VI
SUMMARY OF EXPORTS, INDUCED IMPORTS, AND PRODUCTION OF JAPAN,
TAIWAN, AND KOREA: TOTAL AND VIETNAM, AVERAGE OF 1966 AND 1967
(In \$1,000,000)

	Taiwan		Korea		Japan	
	Exports to Vietnam	Total Exports	Exports to Vietnam	Total Exports	Exports to Vietnam	Total Exports
1. Exports	61.1	483.2	9.7	282.9	147.0	9,745.7
2. Supply requirements	134.5	1,023.6	16.3	477.2	355.9	24,705.0
3. Domestic production	102.6	864.1	12.4	445.0	334.7	23,143.0
4. Induced imports	32.0	159.4	3.9	32.2	21.2	1,561.9
5. Ratio of supply to exports in %	2.20	2.12	1.69	1.69	2.42	2.54
6. Ratio of imports to supply in %	23.76	15.58	24.08	6.75	5.97	6.32
7. Ratio of imports to exports in %	52.35	32.98	40.71	11.38	14.45	16.03

Sources: Export data (1966 and 1967) from [15]. Input-output data: For Taiwan (55 inter-industry sectors), [12]. For Korea (43 inter-industry sectors), [1]. For Japan (56 inter-industry sectors), [11].

Explanation: Domestic production requirements (row 3) of each country have been computed with the following multiplication: $(1-A+M)X$ where A and M are the matrix of input and import coefficients respectively and X the vector of either exports to Vietnam or total exports. Induced imports (row 4) are derived by multiplying import coefficients and domestic production requirements, and gross supply (row 2) is the sum of these two components.

components, domestic production, and imports (rows 3 and 4). The ratios of imports to total supply are shown in row 6. These ratios clearly point to differential effects that total exports and exports to Vietnam have on the rate of domestic production and imports. For both Taiwan and Korea, about one-fourth of the gross supply of goods and services used to produce exports to Vietnam consists of induced imports, which is considerably larger than that of total exports. This is especially true for Korea. In other words, these countries' exports to Vietnam comprise those products using relatively small domestic production linkages but large induced imports in comparison with similar effects of their total exports. For Japan, the differential effects are not shown since the two induced import ratios are almost the same.

The Vietnam conflict has provided Taiwan and Korea a greater learning effect in producing and exporting new industrial products than would have occurred under normal conditions. Their production of these products is expected to be, at least in the beginning, more import-inducing than that of "normal" exports. Hence the particular pattern of production and imports shown for Taiwan and Korea is no surprise. But the large import content of these products substantially reduces their net export receipts. As given in row 7 more than one-half of the value of Taiwan's exports to Vietnam or 52.35 per cent is spent for induced imports in comparison with 33 per cent for its total exports. Similarly for Korea, induced imports are 40.7 per cent of its exports to Vietnam but only 11.4 per

cent of its total exports. But for Japan, induced imports are shown to be smaller for exports to Vietnam than total exports.

In recent years, the two largest suppliers of these countries' imports have been Japan and the U.S. Over 70 per cent of the total imports of Taiwan and Korea in 1966-67 were directed from Japan (40 per cent) and the U.S. (about 30 per cent). Their imports from these developed countries, especially Japan, typically consist of producer and capital goods. Therefore, it is likely that a substantial share of Taiwan's and Korea's induced imports for exports to Vietnam comes from Japan and the U.S.

III. ECONOMIC IMPLICATIONS OF WAR-INDUCED REVENUES

In previous sections, Vietnam-related activities, e.g., construction projects, "R and R" spending and increased exports to Vietnam were shown to have become sources of large dollar earnings for many neighboring countries. This section examines the relative importance of these revenues to the economies of the affected Asian countries though the analysis is necessarily broad due to insufficient data. Concluding remarks are included with a few observations on the anticipated effects of the cessation of the war, but a systematic assessment of these effects requires far more information than is available.

A. *Importance of War-Related Revenues*

To examine the economic impact of war-related revenues for individual countries the combined value of U.S. defense expenditures and exports to Vietnam is compared with gross domestic products (GDP) of six Asian countries, mostly by use of two-year averages over the past several years (Table VII). As shown in column 2, the Philippines' exports to Vietnam have constituted at most slightly more than 1 per cent of the total revenue. For Thailand and Korea, this share was more than 10 per cent in the mid-1960s but has fluctuated widely over time and has been considerably lower in recent years. Revenues of these countries reflect mostly sales of goods and services to U.S. military agencies; the war apparently has had relatively little impact on their exports to Vietnam. An important qualification, shown in Section II, is that Korean (as well as Taiwan) exports to Vietnam are largely comprised of new industrial goods. In contrast, Japan, Singapore, and Taiwan's direct sales to Vietnam have been absolutely and relatively large. In 1968, Japan's exports were about one-fourth of combined revenues, compared with about one-tenth in earlier years. For Taiwan, the value of direct sales to Vietnam has exceeded revenues from U.S. defense expenditures for all years considered except 1968 when its exports fell considerably. This accounts for the absolute decline of the combined value of these revenues over the previous year. No data on U.S. defense expenditures are available for Singapore, but its exports to Vietnam have been substantial and rising continuously.

As shown in column 1 of Table VII, Japan stands out as the country with the largest earnings (1966-67), followed by Thailand and Korea. Japan's gross

TABLE VII
SHARES OF U.S. DEFENSE EXPENDITURES AND ASIAN EXPORTS TO
VIETNAM IN GROSS DOMESTIC PRODUCT

	Total Revenue (Defense Ex- penditures and Exports to Vietnam) in Million Dollars†	Exports to Vietnam as a % of Total Revenue	GDP at Current Price in Million Dollars	Revenue- GDP Ratio in %	Incremental Revenue- GDP Ratio in %
	1	2	3	4 (=1/3)	5
Thailand					
1962-63	30.5	6.56	3,192.2	0.96	
1964-65	59.1	12.01	3,723.0	1.59	5.39
1966-67	249.2	5.90	4,864.7	5.12	16.65
1968	318.0*				
1969	278.0*				
Philippines					
1962-63	49.0	1.02	4,444.9	1.10	
1964-65	69.7	0.29	5,659.2	1.23	1.70
1966-67	159.1	1.32	6,844.5	2.32	7.54
1968	169.0*		7,411.2	2.28*	1.75*
1969	180.0*				
Korea					
1962-63	96.5	0.62	3,192.3	3.02	
1964-65	104.6	10.09	2,826.6	3.70	-2.21
1966-67	209.2	5.09	4,163.4	5.02	7.82
1968	306.6	1.83	5,500.0	5.57	7.29
1969	372.9	2.74	6,597.4	5.65	6.93
Taiwan					
1962-63	47.4	55.70	2,045.9	2.32	
1964-65	60.1	65.06	2,690.9	2.23	1.97
1966-67	144.1	54.89	3,355.9	4.29	12.63
1968	119.6	36.45	4,200.2	2.85	-2.90
1969	84.0*				
Japan					
1962-63	421.7	11.07	63,542.0	0.66	
1964-65	368.9	9.60	84,555.2	0.44	-0.25
1966-67	667.5	23.44	110,232.6	0.61	1.16
1968	780.0	25.51	143,215.0	0.54	0.34
1969	640.0*				
Singapore					
1962-63	18.8†		851.7	2.21†	
1964-65	29.0†		965.8	3.00†	8.94†
1966-67	91.3†		1,111.3	8.22†	42.82†
1968	113.7†		1,298.2	8.76†	10.79†
1969	144.8†		1,421.3§	10.19†	25.26†

Sources: All data for Singapore taken from [14]. For other countries, defense expenditures taken from Table I, and export data taken from [9] [10]. Gross domestic product and exchange rates used to convert GDP into dollar values taken from [8]. In addition, 1968 and 1969 exports and 1969 GDP for Korea are taken from [2], and exports for Taiwan and Japan for 1968 are from [15].

* U.S. Defense Expenditures only.

† Exports to Vietnam only.

‡ 1969 U.S. defense expenditures are the annual rates based on the first half of the year.

§ 1969 GDP based on preliminary estimate.

earnings were more than twice that of each of the latter two. Revenue stimulated from indirect sources, e.g., war-induced exports to third countries have probably also been larger for this country than for other Asian countries. In considering the relative contribution of these revenues to economies, however, the percentage of these revenues in income is more relevant than the absolute value itself. Column 4 shows that Japan's earnings as a percentage of GDP is relatively insignificant at less than 1 per cent. The average revenue-GDP ratios for other countries are considerably larger, the largest in 1966-67 being 8.22 per cent for Singapore, 5.12 per cent for Thailand, 5.02 per cent for Korea, and 4.29 per cent for Taiwan. The Philippines' ratio for the same period is a relatively small 2.32 per cent. In the case of Singapore, it should be noted that exports are largely entrepot services with domestic products constituting only a small portion.

All six countries, and especially Japan and Korea have experienced rather marked expansion of their GDP in recent years although real GDP increases are lower because of a rise in price level. Increases in gross dollar revenues from U.S. defense expenditures and exports to Vietnam have risen even faster than GDP's, as evidenced by the rise of the revenue-GDP ratios in most cases. Thailand and Singapore show the largest increase of this ratio, rising from 0.96 per cent in 1962-63 to 5.12 per cent in 1966-67 and from 2.21 per cent to 8.22 per cent respectively.

Incremental ratios (the ratio of a change in revenue to a change in GDP) are shown in column 5. In general, the incremental ratios fluctuate more but are considerably greater than the average ratios for all countries. In 1966-67, next to Singapore's 42.8 per cent, Thailand's incremental ratio of 16.65 per cent was the largest—about one-sixth of the increase in its GDP in 1966-67 over 1964-65 was comprised of the increase in Vietnam-related revenue. For the same period, the ratio is about 8 per cent for Korea and the Philippines, and 12.6 per cent for Taiwan although a negative value is shown in 1968 for this country.

These average and incremental ratios are by themselves inadequate in many ways, but the lack of necessary data limits any meaningful quantification beyond these ratios. For example, given national average ratios, certain individual sectors have been affected more than others. The economic impact of, say, an investment type project such as road building would surely differ from that of consumption items such as personal spending by "R and R" men. Also, revenues from U.S. expenditures or Asian exports to Vietnam represent only the initial injection which sets off a number of indirect and secondary economic effects (which can be domestic or international in nature), e.g., the multiplier effect. When secondary effects are considered, the actual contribution of war-related revenue to the short-run increases in the countries' income would be larger than what is suggested by the average and incremental ratios given in the table.

Increases in Asian sales to U.S. military agencies and exports to Vietnam represent additional inflows of foreign exchange, thereby contributing to improve-

ment of the balance-of-payments and foreign exchange holdings. The quantitative importance of these revenues in terms of their proportion to total exports and imports is given in Table VIII along with trade deficits and size of foreign exchange reserves.

Although varying considerably among countries, the share of these revenues in total exports and imports is generally substantial (columns 4 and 5). For example, in 1966-67 (the latest years for which data are complete for all countries), Korea's revenue represented about two-thirds of its entire exports, and Thailand's about one-third. For both countries, these revenues were about one-fourth their total imports. With intensification of the Vietnam conflict in 1966-67, these proportions were substantially increased over the previous period (1964-65) for almost all countries.

Most less-developed countries incur a trade deficit, and the developing Asian countries listed in Table VIII are no exception. As shown in column 6, the absolute size of trade deficit of all these countries has tended to grow. It is noteworthy, however, that the foreign exchange holdings of Korea, Thailand, and Taiwan have risen substantially despite their trade deficits (column 7).

Although war expenditures have undoubtedly contributed substantially to strengthening the balance-of-payments and foreign exchange holdings of these Asian countries, these revenues are only gross earnings. A significant part of these earnings leaks out in the form of higher imports associated with increased income, prices, availability of foreign exchange, and the need to accommodate Vietnam-related production and service activities which require parts, materials, and finished products. The import component of the latter activities would be especially large for developing countries. As shown for Taiwan and Korea in Section II, for a given amount of export production, total (direct and indirect) induced imports associated with exports to Vietnam are far greater than that of total exports. This pattern of imports would also hold for Vietnam-related domestic production and service activities for these two countries and probably even more so for other countries such as Thailand and the Philippines in light of their economic and industrial structures.

Consequently, if induced imports from various sources were deducted, the net addition to the foreign exchange earnings of the developing Asian countries would be considerably smaller than the initial dollar earnings obtained through U.S. expenditures and exports to Vietnam—perhaps reduced by as much as one-half. (In the case of Singapore, because of its entrepot trade, much of its exports are re-export items.) Nevertheless, the net addition to these countries' exchange reserves is substantial, and some induced imports of any Asian country would, of course, be supplied by other Asian countries.

The trade deficit of any given country is covered by various sources, e.g., foreign aid and investments and a surplus in invisible accounts. But the importance of U.S. defense expenditures as a major dollar earning source is clearly reflected in the unusual balance-of-payments patterns of Thailand, Korea, the Philippines, Taiwan, and of course South Vietnam. As given in Appendix Table I, between 1964-65 and 1966-67 total receipts from invisible accounts rose about 130 per

TABLE VIII
U.S. DEFENSE EXPENDITURES AND ASIAN EXPORTS TO
VIETNAM AND TRADE INDICES

	Total Revenue (Defense Ex- penditures and Exports to Vietnam) in Million Dollars† 1	Total		Revenue- Import Ratio 4 (=1/2)	Revenue- Export Ratio 5 (=1/3)	Trade Deficit in Million Dollars 6 (=2-3)	Foreign Exchange Reserve in Million Dollars 7
		Imports in Million Dollars 2	Exports 3				
Thailand							
1962-63	30.5	567.9	457.3	5.37	6.67	-110.6	549.5
1964-65	59.1	704.5	606.9	8.39	9.74	-97.6	699.5
1966-67	249.2	977.4	689.0	25.50	36.17	-288.4	966.5
1968	318.0*	1,189.0	660.0	26.75*	48.18*	-529.0	1,021.0
1969	278.0*	1,164.0	710.0	23.88*	39.15*	-454.0	985.0
Philippines							
1962-63	49.0	636.3	640.8	7.70	7.65	4.5	92.5
1964-65	69.7	882.0	753.1	7.90	9.26	-128.9	158.0
1966-67	159.1	1,064.1	827.7	14.95	19.22	-236.4	187.0
1968	169.0*	1,279.6	848.3	13.20*	19.92*	-431.3	161.0
1969	180.0*	1,254.4	854.7	14.35*	21.06*	-399.7	121.0
Korea							
1962-63	96.5	487.1	70.7	19.81	136.49	-416.4	150.5
1964-65	104.6	433.8	147.3	24.11	71.01	-286.5	141.0
1966-67	209.2	856.4	285.0	24.43	73.40	-571.4	300.5
1968	306.6	1,468.2	455.4	20.88	67.32	-1,012.8	391.0
1969	372.9	1,818.3	622.5	20.51	59.90	-1,195.8	554.0
Taiwan							
1962-63	47.4	326.0	269.9	14.54	17.56	-56.1	170.5
1964-65	60.1	540.4	441.5	11.12	13.61	-98.9	298.5
1966-67	144.1	710.6	588.5	20.28	24.49	-122.1	376.5
1968	119.6	905.8	802.4	13.20	14.90	-103.4	381.0
1969	84.0*	1,210.2	1,049.6	6.94*	8.00*	-160.6	443.0
Japan							
1962-63	421.7	6,187.0	5,183.4	6.82	8.14	-1,003.6	2,040.0
1964-65	368.9	8,057.6	7,567.2	4.58	4.87	-490.4	2,085.5
1966-67	667.5	10,592.7	10,109.7	6.30	6.60	-483.0	2,074.5
1968	780.0	12,988.0	12,973.0	6.01	6.01	-15.0	2,906.0
1969	640.0*	16,028.0	15,041.0	3.99*	4.25*	-987.0	3,654.0
Singapore							
1962-63	18.8†	1,358.6	1,126.0	1.38†	1.67†	-232.6	
1964-65	29.0†	1,188.7	942.3	2.44†	3.08†	-246.4	
1966-67	182.6†	1,377.7	1,116.1	6.63†	8.18†	-261.6	
1968	113.7†	1,650.6	1,263.2	6.89†	9.00†	-387.4	
1969	144.8†	2,020.6	1,534.2	7.17†	9.44†	-486.4	

Sources: All data for Singapore are taken from [14]. For remaining countries, all trade data for 1962 through 1967 are from [9] and [10], and total trade data except for Korea for 1968 and 1969 and all foreign exchange data are from [8]. 1968 exports to Vietnam for Taiwan and Japan are from [15], and Korea's trade data for 1968 and 1969 are from [2].

* U.S. Defense Expenditures only.

† Exports to Vietnam only.

‡ 1969 U.S. defense expenditures are the annual rates based on the first half of the year.

cent for Thailand, 59 per cent for Korea and Taiwan, 45 per cent for the Philippines, and 163 per cent for South Vietnam. Two primary sources of these increases are 1) the "Government n.i.e." account in which U.S. military expenditures is a major item, and 2) the "Travel" account which includes earnings from

APPENDIX TABLE I
SELECTED CREDIT ACCOUNTS IN THE BALANCE OF PAYMENTS
OF ASIAN COUNTRIES

Country and Accounts	Two-Year Averages (In Million U.S. Dollars)			Increase in 1966-67 from 1964-65		
	1962-63	1964-65	1966-67	Increase in Million Dollars	Increase in Per Cent	Per Cent of Increase in Invisible Account
Thailand						
Invisible account	135.5	175.0	406.5	231.5	132.29	100.00
(% of tot. curr. acct.)	(22.87)	(22.67)	(37.90)			
Travel	9.4	14.5	48.5	34.0	234.48	14.69
Government, n.i.e.	33.0	58.5	199.0	140.5	240.17	60.69
Military		31.5	157.0	125.5	398.41	54.21
Other		27.0	42.0	15.0	55.56	6.48
Transfer payments						
Central government	44.1	32.0	45.0	13.0	40.63	5.62
U.S. government	28.9	18.0	29.5	11.5	63.89	4.97
Philippines						
Invisible account	253.6	370.5	536.0	165.5	44.67	100.00
(% of tot. curr. acct.)	(28.33)	(32.90)	(39.53)			
Travel	7.4	21.5	66.0	44.5	206.98	26.89
Government, n.i.e.	33.5	55.5	93.5	38.0	68.47	22.96
Military	18.1	33.5	68.0	34.5	102.29	20.85
Other	15.4	22.0	25.5	3.5	15.91	2.11
Transfer payments						
Central government	14.2	22.0	59.0	37.0	168.8	22.36
U.S. government	3.4	2.5	6.0	3.5	140.00	2.11
Taiwan						
Invisible account	100.6	100.3	159.8	59.5	59.32	100.00
(% of tot. curr. acct.)	(26.78)	(18.47)	(21.08)			
Travel	2.2	8.8	27.3	18.5	210.23	31.09
Government, n.i.e.	14.0	20.4	43.9	23.5	115.20	39.50
Transfer payments						
Central government	39.9	18.4	4.5	-13.9	-75.54	-23.36
U.S. government	39.5	17.6	3.5	-14.1	-80.11	-23.70
Korea, Republic of						
Invisible account	351.3	307.7	489.2	181.5	58.99	100.00
(% of tot. curr. acct.)	(83.22)	(67.66)	(62.58)			
Travel	2.9	5.3	16.3	11.0	207.55	6.06
Government, n.i.e.	81.3	81.9	172.7	90.8	110.87	50.03
Military	71.5	68.9	131.8	62.9	91.29	34.66
Other	9.8	13.1	41.0	27.9	212.98	15.37
Transfer payments						
Central government	205.1	139.1	130.3	- 8.8	- 6.33	- 4.85

APPENDIX TABLE I (Continued)

Country and Accounts	Two-Year Averages (In Million U.S. Dollars)			Increase in 1966-67 from 1964-65		
	1962-63	1964-65	1966-67	Increase in Million Dollars	Increase in Per Cent	Per Cent of Increase in Invisible Account
Japan						
Invisible account	1,178.7	1,512.5	2,127.5	615.0	40.66	100.00
(% of tot. curr. acct.)	(18.70)	(16.75)	(17.64)			
Travel	51.2	66.5	83.5	17.0	25.56	2.76
Government, n.i.e.	378.9	346.0	508.5	162.5	46.97	26.42
Military	366.5	337.0	499.5	162.5	48.22	26.42
Other	12.5	9.0	9.0	0.0	0.0	0.0
Transfer payments						
Central government	0.9	2.0	5.0	3.0	150.00	0.49
Vietnam, Republic of						
Invisible account	240.8	365.7	962.8	597.1	163.28	100.00
(% of tot. curr. acct.)	(78.51)	(89.13)	(96.88)			
Travel	0.0	0.0	1.7	1.7	—	0.28
Government, n.i.e.	6.4	43.8	414.9	371.1	847.26	62.15
Transfer payments						
Central government	179.1	226.7	465.2	238.5	105.21	39.94
U.S. government	159.8	217.8	441.1	223.3	102.53	37.40

Notes: 1. Total current account is sum of "Goods and Services" and "Unrequited Transfers." Invisible account is total current account minus "Merchandise f.o.b."

2. Balance of payments accounts used in this table taken from [6] and [7].

"R and R." The share of the increase of total invisible earnings from 1964-65 to 1966-67 accounted for by the combined value of these two accounts is 75 per cent for Thailand, 56 per cent for Korea and 49 per cent for the Philippines. The share for Taiwan is 70 per cent but unlike the other countries, a substantial decline (about 23 per cent) is recorded in her receipt from U.S. government transfer payments. In the case of South Vietnam, almost the entire increase of total invisible earnings comes from two items: Government, n.i.e. and U.S. Government transfers.

While evidence is indirect and qualitative, it is clear that the Vietnam war and the consequent increase in U.S. expenditures in the area since around 1963-64 have contributed to economic prosperity and the strengthening of the balance-of-payments of many Asian countries, namely Thailand, Korea, Taiwan, the Philippines, Singapore, and Japan. A few others, especially Hong Kong, have directly and indirectly received economic benefits though the amount of U.S. expenditures in Hong Kong (also Singapore) is not known.

B. Concluding Remarks

The latest data available has been used in this paper, but because they pertain to the years before 1969 they do not reflect the more recent situation in which the

prospect of peace in Indo-China has improved. Although the timing and form of cessation of the conflict and the political settlement are still uncertain, considerable changes have occurred in 1969 and 1970, e.g., the beginning of peace negotiations and a gradual withdrawal of American troops from Vietnam and other Asian countries. As of early fall of 1970, the number of U.S. forces in Vietnam dropped from about 550,000 men in the spring of 1969 to below 400,000 for the first time in more than three and a half years, and a faster reduction is expected. Singapore, Manila, Kuala Lumpur, Penang, and Tokyo have recently been taken off from the list of cities serving as "R and R" centers. Still on the list at the time of this writing are Bangkok, Hong Kong, and Taipei (along with Sydney and Hawaii).

The revenues from war expenditures are highly sensitive to the strategic situation of the conflict, and recent changes have already been reflected in an apparent tapering off or fall in war-related revenues in some countries. For example, for Thailand, the annual rate of U.S. defense expenditures in 1969 (on the basis of the first half of the year) is absolutely lower than that in 1968. Also, Taiwan's exports to Vietnam in 1968 show a considerable decline over its 1967 level. The current trend of reduction in U.S. military expenditures is expected to continue for the next few years although these expenditures are not likely to be eliminated, especially in countries such as Korea and Thailand.

The expected termination of the war necessitates a shift of priorities and inevitable economic adjustments. Problems of internal and external adjustments depend on a number of factors such as the nature of the peace settlement, the extent to which U.S. expenditures have contributed to the economies in the past and are reduced and substituted by other economically more productive resources in the future, and the level of foreign exchange reserves and exports prospects. The problems of war-torn Vietnam (as well as Cambodia and Laos) will, of course, be vastly different from those of other countries which have benefited from war expenditures.

In those countries which have actively engaged in war supplies to Vietnam, a reduction in U.S. spending is bound to result in demand deficiencies and will have a deflationary impact on some sectors. With the coming of peace, these Asian countries must therefore concern themselves with programs to counter a deflationary reduction of demand and a search for alternative domestic and international avenues into which supply surpluses can be shifted and absorbed.

As indicated before, the GDP share of U.S. military expenditures and exports to Vietnam has been over 5 per cent for Korea and Thailand, and over 4 per cent for Taiwan in recent years with their incremental revenue-GDP values being considerably greater. Considering secondary income-stimulating effects, a sudden and drastic cut in these revenues could have a large depressive impact on their economies with a reduction of income greater than that implied by these ratios. The depressive impact would particularly and immediately be felt by those sectors which have expanded largely as a result of heavy reliance on U.S. military activities and the presence of American troops, e.g., construction, cement, housing, and related service industries. Some highly industrial sectors

of Taiwan and Korea which have directed exports mostly to Vietnam may also be faced with a declined Vietnam demand. Korean exports to Vietnam are small compared with its total exports, but in those countries which export relatively large shares to Vietnam, especially Taiwan and Singapore, a fluctuation in exports to Vietnam could create substantial short-run instability in their export receipts.

There is likely to be a substantial net loss of foreign exchange. The short-run depressive impact on the balance-of-payments is likely to be larger for Thailand, Korea, and the Philippines than for others. The trade deficit for these countries is not only large in relation to their import requirements, but also has grown rapidly. And dollar revenues from U.S. military expenditures have contributed greatly to the sharp increase and large proportion of invisible receipts in the balance-of-payments of these countries in recent years.

One of the key questions is to what extent these Asian countries can expand their exports to offset the expected reduction in invisible trade receipts. Countries such as Taiwan and Korea have been export-oriented and able to diversify their exports, and their remarkable export expansion has been a basic source of their economic development. Although Korea's trade deficit has continued to be large, these countries' success in export growth is expected to continue and mitigate short-run adjustments, e.g., a large increase in Taiwan's total exports occurred in 1968 despite the sharp fall in Taiwan's exports to Vietnam. Also, because the import demand of Vietnam is bound to be large during reconstruction, these Asian countries' trade with Vietnam will continue despite short-run fluctuations in their exports.

In contrast to these countries' exports, those of Thailand and the Philippines have hardly been buoyant in recent years, and both face an increasing and imperative need to promote export-oriented industries. Thailand's gross receipts from U.S. military expenditures have been absolutely and relatively large so that a sudden and uncompensated reduction of these revenues is likely to have a greater depressive impact on this country than on others. Although Thailand's exports to Vietnam have grown rapidly, they have been small and concentrated in rice and a few other primary products. These exports to Vietnam are expected to fall or cease as Vietnam has been traditionally a rice exporter.

In Thailand's favor is its large accumulation of foreign exchange, the relative level of which is probably one of the highest among developing countries. In 1968, this reserve level was \$1,021 million with a trade deficit of about one-half this value in comparison with the Philippines' \$161 million with a trade deficit of \$431 million (see Table VIII). Thailand appears to have a considerable safety margin in the level of foreign exchange to cushion any unfavorable short-run effects on the balance-of-payments although the size of this margin has been falling in recent years.

In the case of the Philippines, the level of foreign exchange is extremely low with little or no increase shown in the past several years. Hence a marginal impact of reduced American expenditures in the country may be considerable even though this revenue has been relatively small compared with those of Korea and Thailand and small in terms of its total income. It is hoped that the Philip-

piners' institution of a flexible exchange rate system in 1970 among other policy changes will provide the necessary incentive toward export expansion.

While the reduction of war-related revenues necessitates inevitable short-run adjustments, certain spill-over effects incidental to the U.S. activities in the area have additional implications for economic development. For example, some U.S. military expenditures incurred for such purposes as construction and maintenance of roads, bridges, and ports have added to the stock of social overhead capital. Also, some U.S. financed operations have influenced the supply of technical skills through the training of local labor and can be regarded as investment in human capital.

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