

Economic Stabilization in Wartime: A Comparative Case Study of Korea and Vietnam

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A careful review and comparison of the tools used during wartime to combat inflation in Korea and to control it in Vietnam is undertaken. It examines the trend in the major inflationary and counterinflationary forces—government expenditures and tax revenue, advances to U.N. and U.S. forces, credit to the private sector, domestic production, and imports—and shows how the import program has been a major factor in controlling Vietnamese inflation. In addition, the trend in the velocity of money and the sensitivity of the tax structure to inflation in each country are examined. The analysis provides insights into methods of stabilizing other less-developed nations not in war.

I. Introduction

This paper will analyze those policies responsible for the successful stabilization of the Vietnamese economy and contrast them with the generally unsuccessful effort to stabilize the Korean economy during the 1950–53 war.¹

Because of the different nature of the war in Vietnam, the United States has been seriously concerned with economic stabilization lest widespread social unrest and discontent generated by high rates of inflation aggravate a volatile political situation.² It is this commitment to control inflation which differentiates Vietnam from Korea.³ Although it may be premature

I wish to thank Professors H. Peter Gray and Michael O'Connor as well as Mr. C. Clifford Tuck and a referee of this *Journal* for their many helpful comments.

¹ By economic stabilization, this paper refers to those policies of a government in a wartime situation that attempt to satisfy the government's military needs without uncontrolled price inflation in an environment where wage and price controls are impractical.

² Evidence suggests that the U.S. command believed social unrest could be held within reasonable limits if the rate of inflation could be held to 3 percent or less per year (see *New York Times* 1969b, p. 1).

³ It was not until May 1952, almost two years after the war started, that the

TABLE 1
COMPARATIVE RATES OF PRICE INFLATION

Date	Price Level	Change (%)
Korea		
1951	612	512
1952	1,644	169
1953	2,167	32
Vietnam		
1966	184	84
1967	250	36
1968	342	37
1969	393	15

SOURCES.—For Korea, retail prices in Pusan, mid-1950 = 100; index number for each year is that of June. For Vietnam, USAID Retail Price Index for Saigon, July 1, 1965 = 100; index number for each year is that for the earliest reported data in July.

to discuss the Vietnamese stabilization experience while hostilities continue, the main elements in the program have been developed and their results are evident. Not only has hyperinflation⁴ been avoided, but table 1 shows that except for 1966, the year of the initial buildup of U.S. forces, relative price stability has been achieved.⁵

This paper will not only explain why this happened, but will provide insights into stabilizing other underdeveloped economies.

II. Some General Observations on the Two Economies

There are many similarities in the economies of these two Asiatic nations. Neither possesses the conditions found necessary for successful stabilization programs in developed nations. Production is of a cottage nature, distribution and exchange is frequently of an open-market or sidewalk variety, and a tax collection infrastructure is not present. Furthermore, the agrarian nature of the economies makes for low supply elasticities, and only a small fraction of gross national product lies outside the barter exchange sector. This makes effective taxation difficult and rationing and price controls

U.N. command and the Republic of Korea agreed to a number of policies aimed at combating inflation (*United States Treaties and other International Agreements* 1952).

⁴ Cagan (1961, p. 25) defines hyperinflation as beginning in a month in which the rise in prices exceeds 50 percent and ending in the month before the rise in prices drops below that amount and stays below it for at least a year. Korea also avoided this calamity.

⁵ For a discussion of the definitional and measurement problems involved with inflations, see Bronfenbrenner and Holzman (1963), and Johnson (1967*b*, pp. 104-6).

virtually impossible and, hence, any attempted resource transfer usually results in serious price inflation. Additionally, the conscription of local manpower on a large scale for military use, the introduction of significant numbers of foreign troops, the absence of a developed capital market and banking system, and an initial tax structure relatively inelastic with respect to price and income increases are further similarities which increase the likelihood of failure of any stabilization effort in these two nations.

As discussed below, and shown in table 1, serious inflation developed in Korea which was not controlled until the last year of the war. Among the factors accounting for a major increase in demand were large currency advances to U.N. forces, the emergence of large deficits in the operation of private and government firms that sold goods and services at subsidized prices, a sharp rise in money velocity, a lack of concern on the part of the U.N. command for an effective anti-inflation program, an inadequate tax structure, and the emergence of a substantial deficit in the budget of the central government. Because of a decrease in domestic production and an inadequate and inefficiently managed government import program under which large amounts of goods were either given away or sold at prices substantially under those prevailing in the market, this increase in money demand was not accompanied by a commensurate rise in goods and services available for sale.

The relative price stability achieved in Vietnam stems basically from a firm commitment by the United States to implement a stabilization program and the effective use of an import program, consciously designed to permit aggregate supply of goods and services to rise, to meet the sharp increase in demand. The fact that changes in the velocity of money have not been destabilizing has been favorable to the success of the stabilization program.

Although Korea and Vietnam used markedly different types of taxes, the anti-inflationary impact of the tax structure was weak in both countries. Unlike Vietnam, Korea experienced strong inflationary pressures for the four years prior to the beginning of its war in mid-1950 with prices advancing in the range of 600 percent.⁶ Thus, the war aggravated an inflation already in progress.

III. The Stabilization Programs

This section will amplify the preceding summary by analyzing the sources of the price inflation in both economies, the weak anti-inflationary effects of their tax structures, the changes in their domestic production, and the size and disposition of imported commodities and their velocity experiences.

⁶ Lee 1968, p. 59.

A. Sources of the Inflationary Pressure

Korea

The various Korean price indices given in table 2 show that from the beginning of hostilities on June 25, 1950, until the armistice proclaimed on July 27, 1953, prices rose between 1,400 and 2,200 percent. During this same period, the money supply increased from 1.248 billion hwan to 24.520 billion hwan, or 1,965 percent.⁷

The behavior of several sources of this rapid rise in prices can be seen in table 3. The major source on the demand side during the first two years of the conflict was the large hwan advances made by the Korean government to the U.N. command. These were made under the agreement of July 28, 1950, which provided that their settlement was to be deferred to a mutually agreeable time.⁸ Had stabilization been the goal, repayment for these advances should have been made immediately to provide the Korean government the wherewithal to institute an import program to curb inflation. Not until inflation became very serious in late 1951 was reimbursement made and an import program undertaken.⁹

TABLE 2
PRICE INFLATION IN KOREA

DATE	WHOLESALE		RETAIL	
	Pusan	Pusan	Throughout Korea	
December 1947 .....	...	...	100	
December 1948 .....	...	...	158	
December 1949 .....	...	...	198	
June 1950	100	100	...	
December 1950	234	260	532	
June 1951	480	612	...	
December 1951	747	860	2,129	
June 1952	1,476	1,644	...	
December 1952	1,511	1,824	5,244	
June 1953	1,766	2,167	...	
December 1953 .....	...	...	7,298	

SOURCES.—For wholesale and retail prices in Pusan, Office of Public Information 1955a, pp. 243–44. For retail prices throughout Korea, *ibid.*, 1955b, p. 28.

⁷ In a currency reform undertaken in February 1953, the official unit of account was changed from the won to the hwan, with 100 won equaling 1 hwan. This reform is discussed later in the text.

⁸ The first repayment, totaling \$12 million dollars, took place on October 15, 1951. The next, which did not occur until September 4, 1952, was followed by five others culminating in a final payment in June, 1953. These six payments totaled \$167 million (see McCabe 1954, pp. 12, 18).

⁹ The exchange rate agreed upon for the reimbursement was 60 hwan per dollar which, until the June 1953 revision granting 180 hwan per dollar, was from $\frac{1}{3}$ to $\frac{1}{2}$ the black-market rate (see McCabe 1954, pp. 1–2).

TABLE 3
FACTORS AFFECTING MONEY SUPPLY
(MILLIONS OF HWAN)

END OF PERIOD	MONEY SUPPLY* † (1)	INFLATIONARY FACTORS			COUNTERINFLATIONARY FACTORS: SALE OF AID GOODS AND FOREIGN EXCHANGE (PER PERIOD) (5)
		Advances to U.N. Forces (per Period) (2)	Advances to Korean Government (3)	Bank Credit Expansion (4)	
December 1945 ...	118	...	1	117	0
June 1950	1,248	...	838	924	632
December 1950 ...	2,905	547	1,186	-168	-93
June 1951	5,330	1,435	749	638	397
December 1951 ...	7,848	2,189	-753	2,125	1,043
June 1952	10,449	2,324	-1,181	1,852	394
December 1952 ...	15,641	3,229	487	4,273	2,797
May 1953	19,259	2,826	2,464	3,038	4,710
December 1953 ...	34,896	5,196	8,490	15,862	13,911

SOURCES.—Bank of Korea (April-May 1953) and United States Armed Forces Far East (December 1953).

* Consists of currency in circulation and demand deposits. The latter is seldom above 1/3 of the total.

† Col. 1 = col. 2 + col. 3 + col. 4 + col. 1_{t-1} - col. 5_t.

After June 1952, bank credit expansion and advances to the Korean government played the primary role in the growth of the money supply: the former expanded from 1.8 billion hwan to 15.9 billion hwan while the latter moved from a net deposit of 1.2 billion hwan to a deficit of 8.5 billion hwan (see table 3). These data relate the amazing fact that the Korean government was running a budget surplus until the third year of the war. This was possible largely because the care of refugees and prisoners of war was funded by the U.N. command. Early in 1953, a sharp increase in defense expenditures prompted the Korean government to seek advances from the Bank of Korea.

Vietnam

Prior to the large-scale American intervention in mid-1965, the rate of inflation was mild. From 1956 until mid-1965, consumer prices increased 39 percent, or at an annual rate of 1.73 percent. Wholesale prices in Saigon increased 30 percent over the same period, an annual rate of 1.72 percent (see table 4). However, after American intervention the rate of price inflation increased sharply. During the first six months of 1965 the consumer price index increased only 16 percent. During the last six months

TABLE 4
INFLATION IN VIETNAM, 1956-JULY 1965

	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Consumer price index for working class	105	100	97	100	99	105	107	117	121	146
Saigon wholesale price index	104	104	106	100	105	117	121	124	129	135

SOURCE.—National Institute of Statistics (1966).

NOTE.—1959 = 100.

it increased 39 percent. The rate of inflation to mid-1969 is documented in table 5. From mid-1965 to mid-1969 prices increased 307 percent as measured by the USAID all-commodities index. But the peak rise was in 1966. Succeeding years recorded smaller rises, and from mid-1968 to mid-1969 the rate was only slightly in excess of 12 percent. During this same four-year period (mid-1965–mid-1969) the money supply increased from 34.8 billion piasters to 130.5 billion piasters, or 375 percent. Thus, the rate of increase in the money supply has been slightly greater than the rate of increase in the price level.

The magnitudes of the factors affecting demand components in Vietnam and, hence, the relative importance of the sources of excess demand have been somewhat different from those in Korea. The main sources of demand pressure (indicated in table 6) have been large piaster advances to U.S. forces and the large budget deficit of the Vietnamese government. The expansion of bank credit has been insignificant since 1966. As in Korea, the advances to U.S. forces have been used largely for the employment of local laborers, who number upward of 150,000.

TABLE 5
COMPARATIVE PRICE INFLATION BY INDEX AND MAJOR COMPONENTS, 1965–69
(% PER ANNUM)

	1965		1966		1967		1968		1969
	USAID	NIS	USAID	NIS	USAID	NIS	USAID	NIS	USAID
General index . . .	44	55	56	59	37	34	30	23	12
Food index	51	72	60	61	42	43	29	26	14
Nonfood index . .	30	29	50	54	24	19	32	22	3

NOTE.—Reference points for USAID index are January 1, 1965 (= 100), January 3, 1966, January 3, 1967, January 1, 1968, and January 6, 1969. The USAID index, computed weekly by the Agency for International Development Mission in Saigon, is a subindex of that computed monthly by the Vietnamese National Institute of Statistics. The USAID index excludes most types of services found in the NIS index. The USAID index shown in this table will show a different rate of yearly inflation from that of table 8 because of different base dates from which price changes have been measured. The NIS index for working-class families is one of two indices computed for the greater Saigon area. It differs from the middle-class index mainly in that greater weight is given to services.

TABLE 6
FACTORS AFFECTING MONEY SUPPLY
(BILLIONS OF PIASTERS)

END OF YEAR	MONEY SUPPLY* (1)	CHANGE NET (2)	INFLATIONARY FACTORS				COUNTERINFLATIONARY FORCES	
			Advances to U.S. Forces (2)	GVN Deficit Budget (3)	Bank Credit Expansion (4)	Other† (5)	Imports (6)	Other‡ (7)
1965 ..	47.6	20.2	NA	34.3	-0.3	NA	NA	NA
1966 ..	65.4	17.8	38.0	21.4	21.8	8.3	51.2	20.5
1967 ..	82.6	17.3	55.7	33.0	-2.0	10.8	78.9	1.3
1968 ..	125.8	43.2	59.8	60.9	-0.2	12.0	82.3	7.0

SOURCES.—Agency for International Development (1966, 1967, 1968) and National Bank of Vietnam (1965, 1966, 1967).

NOTE.—Col. 1 t = col. 2 t + col. 3 t + col. 4 t + col. 5 t + col. 1 t_{-1} - col. 6 t - col. 7 t .

* Consists of both bank notes in circulation and private demand deposits. The latter varies between 1/4 to 1/3 of the total.

† Mainly invisible exports.

‡ Consists mainly of changes in import margin requirements, time and savings deposits, bank capitalization, and various errors and omissions.

One important difference in the fiscal management of the Vietnamese economy is to be noted. Since mid-1966, the U.S. military has made a concerted effort to limit its piaster spending. While the exact details of this effort are still unavailable to researchers, it is known that the United States has made yearly projections of its expenditures by category (construction, operation and maintenance, etc.) and purpose (labor, heat, light, power, etc.). These projections, when added to forecasts of all other items increasing and decreasing the money supply, yield the so-called monetary gap or net expected new money creation. Depending upon the size of this expected gap, a number of programs have been designed and implemented to lessen expenditures "in country." The most publicized program has been to schedule rest and recreation outside of Vietnam in order to lessen piaster expenditures. As noted previously and implied by the discussion of Korea, this effort to limit piaster spending has differentiated the two stabilization efforts.

B. The Tax Structures

Many criteria might be used to judge the adequacy of a tax structure for stabilization purposes. Two, however, appear of fundamental importance. The structure should effectively depress private consumption without deleterious effects on work incentives, and it should permit the government to maintain, at the very least, a constant command over real resources. It is difficult to specify the most effective combination of income and consumption taxes for depressing private consumption in an inflationary

situation.¹⁰ Subject to qualification, with unchanged progressive rates and income intervals, tax liabilities rise more than proportionately when money income increases. This is not the case with proportional or regressive taxes. However, if the inflation is severe and the income intervals at which progressive income taxes are assessed lag significantly behind increases in wages and salaries, many incomes will rise to the top of the tax range, and from then on the progressive tax takes on a proportional character. It is also possible to posit situations in which a regressive or proportional tax would be more efficient in reducing inflation than a progressive tax (Goode 1952). The second aspect of tax structure, insuring at least a constant command of resources, is important for stabilization, for it lessens the possibility that the government will have to resort to printing money.

Korea

A comparison between Korea's and Vietnam's tax sources is very instructive on this point. In table 7 it is shown that during the war years over one-half the Korean tax revenue was derived from direct taxes. This has not been the case in Vietnam (see table 9), where direct taxes have accounted for only about 6 percent on average.

For Korea, the largest single revenue source was the temporary land income tax promulgated in September 1951. It was also the only direct tax with a built-in insurance against revenue depreciation induced by inflation. This was because 95 percent of the tax was paid in kind—mainly rice and barley. The rate schedule was graduated from 15 to 28 percent of physical output according to the amount of the assessed average yield. No tax was required when, as a result of a calamity or abnormal weather conditions, the harvest fell below 30 percent of the rated average yield.¹¹

Two-thirds of the personal income tax was derived from the net earnings of unincorporated businesses and 30 percent from the taxation of wages and salaries. While the tax rates were graduated the income intervals were not changed during the war years, with the result that the progressivity aspects of the tax diminished. The same was true of the corporate income tax whose graduated rate was from 35 to 70 percent of net income.

The business tax was a transaction tax levied on the gross receipts of all businesses. The law specified thirty-seven rate classifications depending upon the source of business receipts. The tax rates were all a constant percentage.

¹⁰ This is not to be confused with the question of what type of tax has the greater anti-inflation potential for equal amounts of revenue raised. Musgrave (1959, pp. 449–50) has shown that in this case the consumption tax is generally superior.

¹¹ For a detailed discussion of the Korean tax structure, see Office of Public Information 1955a, pp. 252–62.

TABLE 7
SOURCES OF CENTRAL GOVERNMENT REVENUE, 1949-54
(% PER SOURCE)

YEAR	DIRECT REVENUE					INDIRECT REVENUE					TOTAL INDIRECT	GRAND TOTAL
	Personal Income	Corporate Income	Business Tax	Temporary Land In- come Tax	Other*	TOTAL DIRECT	Commodity Excise	Customs	Liquor Tax	Other†		
1949	26.4	2.9	5.1	...	8.8	43.2	11.8	10.3	22.1	12.6	56.8	100.0
1950	11.8	8.8	9.8	...	39.1	69.5	6.9	7.9	7.4	8.3	30.5	100.0
1951	14.3	4.9	12.6	21.6	4.8	58.1	10.3	11.5	10.9	9.1	41.8	100.0
1952	12.8	3.5	13.3	30.6	1.7	61.9	7.9	14.6	9.9	5.7	38.1	100.0
1953	13.8	3.9	14.5	21.8	1.8	55.8	8.8	16.3	12.7	6.4	44.2	100.0
1954	14.9	4.4	10.0	14.8	3.0	47.1	19.3	19.5	9.2	4.9	52.9	100.0

SOURCE.—Bank of Korea 1962.

* Consists of enterprise, temporary profit, land, inheritance, mining, gifts, travel, registration, and license taxes.

† Consists of textile, entertainment and restaurant, electricity and gas, admissions, parimutuel, and tonnage taxes.

In evaluating the effectiveness of indirect taxes in a stabilization program, several factors are important to consider. First, ad valorem taxes permit revenue to rise in proportion to the increase in prices or, depending upon the volume of goods sold, at a faster rate. Specific taxes also can be effective in reducing inflation if the government is willing and able to make necessary and possibly frequent adjustments in rates. Second, indirect taxes may be unreliable revenue producers if they depend heavily upon imported commodities whose value is determined by a fixed exchange rate. In this case, given an ad valorem rate structure, the increase in revenue will depend upon the relative rates of inflation in the importer and exporter countries, the cross-elasticity of demand of imports and domestic substitutes, and any changes in real income in the importer country. With no inflation in the exporter country, low cross-elasticity of demand, and little change in real income, tariff revenues will remain fairly constant, and a form of monopoly rent will accrue to importers through their ability to buy cheap and sell dear. When flexible exchange rates are introduced, the price of the goods on which the tariff is assessed will depend upon the relative rates of inflation in the exporter and importer countries; and revenue should increase in proportion to the increase in that relative rate. Periodic devaluation provides a further in-between case.

In Korea, the customs, commodity, liquor, and most other indirect taxes were ad valorem, but the rates were not uniform (for example, for commodity excise taxes, the rate varied from 10 to 100 percent depending on seven broad tax classes; the liquor tax varied from 20 to 100 percent of selling price, and the tariff rates varied depending on the import classification). The largest share of revenue derived from indirect taxes came from customs revenue. Its increase over the three-year period basically reflected the implicit devaluation of the hwan. The practice was to grant import licenses on the basis of the official rate (60 hwan per dollar), but to require the importer to buy the foreign exchange and pay duty on the basis of a higher exchange rate (reported to be 190–200 hwan per dollar) (McCabe 1954, p. 18).

As shown in table 8, the tax structure in Korea was able to triple real tax proceeds from 1950 to 1953. The evidence also would tend to suggest that the elasticity of the original Korean tax structure with regard to money income was close to unity. Even after subtraction of the revenue from the temporary land income tax enacted during the war, total nominal tax revenue increased in every year except 1952 at a rate in excess of the rate of inflation, and in 1952 its rate of increase was close to the inflation rate. Undoubtedly, some of this was in response to tax rate increases. Even in the turbulent year of 1950, in which tax collection was difficult, real tax revenue increased as nominal yield rose 17 percent faster than the rate of inflation.¹²

¹² In an effort to calculate the revenue elasticity of the tax system with regard to

TABLE 8
REAL TAX REVENUE IN KOREA, 1949-53

Year	Nominal Tax Revenue (Millions of Hwan)	Price Index	Real Tax Revenue (Millions of Hwan)	Percent Change
1949	136	100	136	...
1950	429	269	159	17
1951	3,921	1,075	365	230
1952	9,586	2,648	362	-1
1953	21,426	3,686	581	160

SOURCES.—For nominal tax revenue, Bank of Korea 1962; for real tax revenue, index of retail prices throughout Korea, 1949 = 100.

However, this increase in real revenue did not keep pace with the resource needs of the Korean government. From mid-1952 until the end of the war the government operated with a large budget deficit, which would have arisen earlier had it not been for U.N. funding of several programs.

An additional question also applicable to Vietnam is whether a revenue elasticity with respect to price inflation of unity implies that the tax structure passes the minimum test of insuring a constant command over resources. This would have been the case if the goods and services purchased by the government had experienced the same degree of inflation as those used in the index to deflate the nominal revenue series. Whether they have done so is difficult to ascertain. Most of the tax revenue in these two countries has been used to pay wages and salaries; and the evidence, as well as experience, suggests that at least the rates on the official pay tables applicable to the civil service and military have lagged behind the rate of inflation. However, through upgrading of positions and more rapid promotions, the effective rate of compensation may have advanced to keep pace with inflation. It seems probable that such was the case in Korea where prices rose over 500 percent in 1951 and 160 percent in 1952. In Vietnam the wage and salary rates of public sector employees have usually been adjusted with a one-year lag to offset the effects of inflation (*New York*

inflation, the nominal tax revenue attributable to the prewar tax structure was regressed on the real value of goods and services available for sale (B) and the price index of retail prices throughout Korea (P). The resulting equation and the standard errors of the regression coefficients were:

$$Y = -.21 - .0016(B) + .00425(P),$$

(.036) (.00244)

which yielded a revenue elasticity with regard to price inflation of 1.22. This is the maximum inflation elasticity of the prewar tax structure, for the rates of some of these taxes were changed during the war and data limitations precluded separating this revenue from that arising in response to the original rate structure in effect at the start of hostilities. The relatively high standard error of the regression coefficient applicable to price changes further reduces the validity of such an elasticity calculation.

Times 1969a, p. 1). If such a lag has been reflected in the effective rate of compensation, then unit elasticity implies an increased command over real resources.

Vietnam

As noted above, the structure of taxes in Vietnam is markedly different from that which prevailed in Korea. Over 90 percent of the total central government tax revenue has come from indirect taxes, and some two-thirds of the indirect tax revenue has been in some way related to imports (see table 9). As discussed below, this is one weakness in the tax structure. A second is that, even though a high proportion of GNP has been related to agriculture, the central government has only two taxes related to agriculture, currently furnishing under 1 percent of the tax revenue (on slaughtering and on rice, the latter collected at the milling stage). The lack of a property registration system has accounted for this situation. A third deficiency of the tax system is that the rates on many highly taxable items, especially petroleum products, are specific, and the government has been loathe to change them. Fourth, both Vietnam and Korea have had a lack of trained tax collectors, and many business firms have been run on a cash basis with few records kept.

As table 9 shows, very little revenue has been raised from direct taxes, which consist of income taxes on business and personal incomes, property taxes, and a patent or business-license tax. While the income tax rates are graduated, they have provided little revenue because evasion has been relatively simple. However, effective January 1, 1967, the government decreed withholding of taxes by employers from workers' wages. For practical purposes this decree affected government employees, those employed by the American sector, and those employed by "large" foreign and Vietnamese firms. Nevertheless, direct tax revenue almost doubled in 1967 over 1966 and increased another 50 percent in 1968. The tax on property has not accrued to the central government but to the village, municipality, or province where the property is located.

While both indirect and excise taxes are listed in table 9, the distinction is based on which government agency collects them. (Indirect taxes on petroleum products, entertainment, meat, motor vehicles other than motor bikes, paddy rice, ice, precious metals, and dancing are collected by the Directorate of Indirect Taxes, while excise taxes, largely on cigarettes, beer, soft drinks, and various types of production are collected by the Directorate of Excise Taxes.) Many of these taxes are specific rather than ad valorem. However, this has not hampered their effectiveness, for the rates—especially on beer, cigarettes, and soft drinks—have increased faster than have prices. Taxes on these three products have accounted for most of the indirect taxes collected. They have been good revenue pro-

TABLE 9
SOURCES OF CENTRAL GOVERNMENT REVENUE, 1946-68
(% PER SHARE)

YEAR	INDIRECT TAXES										TOTAL INDIRECT REVENUE	
	TOTAL DIRECT TAXES	Indirect	Excise	Regis- tration	Customs	Austerity	Other	Per Equation	Economic Consolida- tion	Exchange Equali- zation		
1964	7.7	19.1	13.9	6.8	32.8	7.1	12.6	...	...	...	92.3	100.0
1965	7.2	17.1	17.2	6.9	27.8	6.8	17.0	...	...	...	92.8	100.0
1966	3.6	9.5	11.1	5.3	21.0	6.5	9.1	11.1	2.7	20.1	96.4	100.0
1967	5.3	8.8	13.9	5.4	22.3	6.7	7.5	14.4	7.3	8.4	94.7	100.0
1968	8.0	10.1	13.3	5.6	32.1*	32.1*	12.0	16.5†	2.4	2.4	92.0	100.0

SOURCE.—Agency for International Development (1968).

* For both customs and austerity.

† Includes both per equation and economic consolidation.

ducers for two reasons: (1) the inelasticity of the demands for these products, and (2) the fewness of the firms in Vietnam manufacturing them, which has made the levying and collection of taxes relatively easy. Included in excise taxes are the per equation taxes on beer, which are designed to offset some of the comparative advantage of the breweries close to Saigon. (Beer itself is actually subject to five different taxes.)

The registration tax applies to a host of transfers (sale of real estate, motor vehicles, rental contracts, letters of credit, business contracts, etc.), generally at ad valorem rates. The complexity of laws which apply to the tax assessment has made compliance difficult and time consuming.

The other revenue category consists of income collected by various government ministries for services performed or privileges granted to individuals (for example, telegrams, telephone, civil aviation, identification cards, lotteries, forestry contracts, etc.).

Reference to table 9 shows that over half of Vietnam's tax revenue has been related to foreign trade. This revenue divides itself into two categories: that arising from physical imports and that from the sale of foreign exchange. However, the manner in which foreign trade has been carried on has weakened the tax system as a stabilizing tool. (But since revenue related to imports is relatively easy to collect, taxes based thereon are dependable.) First, the use of a fixed exchange rate has prevented the price of imported goods from rising as fast as domestic prices, thereby reducing the revenue potential of the tax system.¹³ Second, while the customs schedules have been revised four times since 1961, the revenue potential of the tariff was long below that possible because of the use of extremely broad classifications. For example, all imported alcohol was charged the same rate whether it was for industrial or human consumption. In 1968 Vietnam adopted the Brussels tariff nomenclature which, because of its much finer classification system, should raise revenue.

Beginning in December 1961, additional customs duties known as austerity taxes have been placed on "luxury" goods—a category which actually includes a large segment of imports. The austerity taxes were raised in 1965 and again in 1968.

The other taxes related to foreign trade have been based on the sale of foreign exchange and collected by the National Bank of Vietnam instead of the treasury. The first of these is the economic consolidation tax, which represents the difference between the rate at which the United States pays for its advances from the government and the rate at which the National Bank sells dollars to importers.¹⁴ This tax has not been applied to imports

¹³ Since 1964 the exchange rate has been subject to one devaluation and revised from an explicit multiple system to a single rate. However, as shown below, because of the tax system an implicit multiple rate system still survives.

¹⁴ The United States was receiving either 80 or 118 piasters per dollar depending upon the purpose of the advance, and the National Bank was selling dollars to

financed under the commercial import program (see below). For each dollar of such imports, 118 piasters have been credited to a counterpart account—a rate equal to that paid by the importer.

The exchange equilization tax, which also has been diminishing in importance, was enacted in June 1966 to recover the devaluation profit for the government. All imports licensed under the old exchange rate (60 piasters to the dollar) were taxed in order to equalize the pre- and postdevaluation costs of the goods (the tax was 58 piasters per dollar of imports). In the critical inflationary year of 1966, this tax produced 20 percent of Vietnam's tax revenue.

The third type of tax related to imports is the per equation tax, whose effect has been to give Vietnam an implicit system of multiple exchange rates. The justification for this tax, instituted in 1966, was to equalize the prices of goods imported from the United States and third countries so that Vietnamese importers would continue to use U.S. import sources. In this case, the goods could be financed under the commercial import program and would not draw down Vietnam's foreign exchange reserves. Of course, such transactions involve a tradeoff between per equation and economic consolidation tax revenue. However, since the rate of per equation tax varies from 5 to 140 piasters per dollar, it generally is a better revenue producer than the consolidation tax. Starting in April 1969, the per equation tax also has been levied on imports of U.S. origin.

Table 10 shows that while the tax structure has been able to provide the Vietnamese government at least constant real tax proceeds, as an anti-inflation device it has left much to be desired. Had the taxes related to the sale of foreign exchange not been enacted, the rise in nominal tax revenue

TABLE 10
REAL TAX REVENUE IN VIETNAM, 1964-68

Year	Nominal Tax Revenue (Millions of Piasters)	Price Index	Real Tax Revenue (Millions of Piasters)	Change (%)
1964	13,046	100	13,046	...
1965	16,442	118	13,933	7
1966	42,451	202	21,015	51
1967	54,882	297	18,478	-12
1968	54,212	375	14,457	-22

SOURCE.—Agency for International Development 1968.

NOTE.—Consumer price index for working-class families, 1964 = 100. The index number for each year is the yearly average.

importers for 118 piasters. In 1968, an agreement was signed giving the United States 118 piasters for all its purchases and, hence, the economic consolidation tax will diminish to insignificance.

from 1965 through 1968 would have been less than the increase in prices—despite the fact that the excise and indirect tax rates were increased, as were the customs and austerity rates. In addition, the value of imports for tax purposes was increased by the 1966 devaluation, and withholding of income taxes has been made more effective. Clearly, the elasticity of the prewar tax structure with regard to price and income was less than unity. At least 25 percent of the increase in nominal revenue must be attributed to new taxes and increases in the rates of existing ones.¹⁵

C. *Monetary Policy as an Anti-Inflation Device*

That the contribution of monetary policy to the stabilization efforts in both countries has been minimal is attributable to the same set of conditions: the absence of developed financial markets,¹⁶ an unsophisticated populace reluctant to purchase bonds, legal sanctions against realistic interest rates,¹⁷ a money supply consisting only in small part of demand deposits,¹⁸ the reluctance on the part of government to issue constant

¹⁵ As in the Korean case, calculations were made to estimate the revenue elasticity of the Vietnamese prewar tax structure with regard to price inflation. The nominal value of tax revenue attributable to that structure was regressed against the real value of goods and services available for sale (*B*) and consumer price index for lower class families in Saigon (*P*). The resulting equation and standard errors of the regression coefficients were:

$$Y = .100 + .038(B) + .109(P).$$

(.551) (.017)

Using the regression coefficient applicable to prices, a revenue elasticity with regard to price inflation of 0.849 was calculated. As in the Korean case, data limitations precluded separating the revenue applicable to changes in the prewar tax rates from the revenue arising in response to the original prewar rate structure. Hence, the elasticity of 0.849 can be regarded as the maximum inflation elasticity of the prewar tax structure.

¹⁶ This lack of developed financial markets and its implications for open-market operations was anticipated by those who drafted the Bank of Korea Law in 1950. While a provision was made for such operations, they were not expected to be carried out (see Bloomfield and Jensen 1951, p. 51).

¹⁷ In Korea, five-year national bonds were sold whose coupon rate was only 5 percent, while free-market interest rates varied between 60 and 240 percent per year (see McCabe 1954, p. 14). A similar situation prevails in Vietnam. However, I was unable to uncover a reliable estimate of these rates.

¹⁸ In Korea, demand deposits were seldom above one-third of the money supply (see notes to table 3). In Vietnam the proportion decreased from about one-third in 1959 to one-fifth in 1968 (see Agency for International Development 1968, p. 49). Thus, changes in reserve requirements will not be too effective in restraining total money creation. In Korea, from 1950 until March 31, 1953 the legal reserve ratio on total bank deposits remained at 10 percent. On the latter date, they were authorized to hold 50 percent of their legal reserves in vault cash instead of at the previous 20 percent level. It was not until June 7, 1953 that reserve requirements were raised to 12 percent and on August 1 to 15 percent (see Bank of Korea 1962, pp. 282, 286). To November 1966, the maximum reserve requirements for Vietnamese commercial banks was 35 percent. From that date until February 1968 the rate was 25 percent on

purchasing power bonds, a concept of monetary control different from that prevailing in Western nations,¹⁹ and the willingness of the central bank and commercial banks to serve as the handmaidens of the fiscal authorities in creating money to finance the government deficits and foreign trade via bond purchases or advances.²⁰ However, even within these confines both nations have adopted a device for monetary control which has consisted of an advance deposit on imports. At the time the letter of credit is issued on behalf of the importer, a deposit of from 10 to 30 percent of the cost of the imports must be made. The remaining balance is settled according to the credit arrangements made at the time of the loan. The effectiveness of this restraint depends upon the down-payment rate and the volume of imports. If imports are rising, monetary restraint becomes greater. For an estimate of the effectiveness of this restraint in the Vietnamese case, see table 6.

D. The Import Programs

Korea

In underdeveloped nations with low per capita incomes and relative inelasticity of domestic output, a key input in any stabilization program is imports. It is crucial that supply expand as rapidly as demand in order to prevent and/or reduce inflation.

Korea had been the recipient of U.S. aid prior to the war. Since January 1, 1949 the Economic Cooperation Administration (ECA) had been providing aid, the sales proceeds of which were deposited in a counterpart fund for joint United States and Korean use. During 1950 and 1951 most of the goods sold were those imported by ECA or, when ECA was phased out of Korea, with ECA funds transferred to the U.N. forces. These im-

demand deposits and 15 percent on term deposits. After February 1968 the ratio on demand deposits was reduced to 20 percent.

¹⁹ Campbell and Tullock (1957, p. 344) have argued that Western concepts of monetary control have limited applicability to Korea, where the bulk of bank loans have been used to make up losses incurred by the government and other large enterprises who sell their goods and services at prices below cost. As long as the government maintains these subsidies, if bank loans were unavailable, some other equally inflationary way would be found to underwrite them. They feel that it would have been virtually impossible to eliminate these subsidies, as they contributed substantially to the political stability of the central government. In Vietnam such subsidies, especially on rice, have been a source of the government deficit. However, the virtual elimination of this subsidy in 1968 did little directly to undermine the stability of the government.

²⁰ Because of the conditions enumerated above, it should be obvious that when the central bank and banking system finance the government deficit, the former cannot, in turn, sell securities in the open market to dry up the newly created money. The extent of the purchases of securities by the central bank in the Korean case can be seen in Campbell and Tullock (1957, pp. 348-49). In the Vietnamese case, see National Institute of Statistics (1968, p. 210).

ports amounted to \$45.9 million, of which \$32.3 million were sold. During the same two years, the value of aid goods imported by the army, including donations by U.N. members and goods imported for civilian relief as authorized by Congressional appropriation, totaled \$147 million, of which only \$15 million were sold. The remainder of these goods were largely given away (McCabe 1954, pp. 11–12).

The net counterinflationary contribution of those goods sold is difficult to determine. Through November 30, 1953 it was estimated to have been 4.6 billion hwan, or about one-fourth of the dollar value of aid goods converted at the rate of 60 hwan per dollar (McCabe 1954, pp. 17–18).

The prime reason for the relatively low level of proceeds from the sale of aid goods was that many were given away, and those sold were priced into the Korean economy at prices considerably below those prevailing in the market. The reason for this practice as it concerns the sale of U.S.-financed aid goods appears to have been the belief that to sell the goods at going prices would cause increased price inflation and upward pressure for wage increase. Johnson (1967*a*, p. 70) holds that this is both a common belief and practice among underdeveloped countries.

An additional source of imported goods arose when the Korean government sold the proceeds of the reimbursement for its advances to the U.N. command. This was an especially important counterinflationary force in 1953 and was largely responsible for the sharp reduction in the rate of price inflation that occurred in that year (see tables 1 and 3).

Goods imported by the government were generally sold below market prices to its various agencies or organizations. They, in turn, sold the goods at market prices and used the profits to finance their activities. Critics have alleged that this was a sign that the import program was poorly handled and not used as an effective anti-inflation tool. Campbell and Tullock (1957, p. 343) do not support this view. They argue that this practice was simply an indirect way of financing the activities of government organizations and agencies. In its absence, the central government could have sold the goods at market prices, but then, since it would have had to make higher budget allocations to these groups, its overall deficit would have remained the same.

The requirement that licensed importers buy their foreign exchange at rates three to four times greater than the official exchange rate was an additional contribution of the import program to stabilization.

Vietnam

Support for the view that imports have been a critical element in the successful stabilization effort is provided by table 6. Under the auspices of the Agency for International Development (AID, the successor organization to the ECA which functioned in Korea), a large part of these

TABLE 11
IMPORT LICENSING BY SOURCE OF FINANCE
(MILLIONS OF U.S. DOLLARS)

	1964	1965	1966	1967	1968
United States:					
PL 480	42.8	59.5	93.4	160.0	96.4
CIP	144.6	231.6	321.3	80.3	138.6
Government of Vietnam	92.1	115.3	245.8	291.7	379.8
Total	279.5	406.4	660.5	532.0	614.8

SOURCE.—Agency for International Development 1968.

NOTE.—The amount of imports licensed does not agree with the amount received during the year because delivery is generally from two to six months after the license is granted. Hence, the numbers in this table will differ from those calculated by applying the exchange rate to the figures in table 6.

goods has been supplied from the United States under two programs: Food for Peace (Public Law 480) and the Commercial Import Program (hereafter referred to as CIP). Under these programs, a licensed Vietnamese importer paid piasters into a counterpart fund whose proceeds were divided in various proportions between the Vietnamese government and the United States and used to finance certain on-going U.S. expenses and mutually agreed upon joint programs. In addition, the United States has furnished sizable foreign exchange for piaster advances.²¹ These reserves have been used by the Vietnamese government to fund an extensive import program of its own. The breakdown of these imports by source of financing is shown in table 11.

These imports, mainly responsible for Vietnam's stability, have been equivalent to approximately 25 percent of the nation's gross domestic product (see table 16). They have been responsible for the conspicuous absence of austerity in consumption²² and, as indicated by their size in comparison with the nation's exports, will be unsustainable in the postwar period unless substantial U.S. aid continues.

The ability of imports to absorb local currency was significantly aided by the nearly 100 percent devaluation of the piaster in June of 1966. This act raised the exchange rate from 60 to 118 piasters per dollar, thereby

²¹ Food for Peace and CIP imports were recorded until June 1966 at the rate of 60 piasters per dollar. Since that date, they have been recorded at 118 piasters per dollar. Reimbursement for advances was, prior to June 1966, at the rate of 73.5 for official purchases and 118 for piasters purchased by the United States for its personnel. From June 18, 1966 until October 1, 1967 the respective rates were 80 and 118. Since that time, all reimbursements have been at the uniform rate of 118 per dollar.

²² Import licenses financed by the Vietnamese government for motorcycles as a percentage of the total value financed by the Vietnamese government amounted to 10, 20, and 14 percent, respectively, for 1965, 1966, and 1967 (see Agency for International Development 1968, p. 90).

doubling the anti-inflationary impact of each dollar's worth of imports.²³ The devaluation and the import program taken together constitute the primary reason for the success of the stabilization program and evidence the conscious stabilization effort which was absent in Korea.

E. Domestic Production

Korea

The impact of the war on domestic production is shown in table 12. As measured in constant 1955 hwan, production fell during the first two years of the conflict but revived after the authority of the central government had been restored in most of South Korea.

Vietnam

Since GNP statistics for Vietnam after 1965 do not exist, it is difficult to describe accurately the effect of the war on domestic activities. However, the breakdown in table 13 provides some indications of the impact of domestic production on the stabilization problem. The two categories of domestic production, accounting for over 40 percent of gross domestic product by industrial origin, present a mixed picture. Agriculture, accounting for over 30 percent of GDP has declined since hostilities started on a large scale. The decline in agriculture is largely accounted for by the

TABLE 12
ESTIMATED GROSS NATIONAL PRODUCT, 1949-53
(BILLIONS OF HWAN)
1955 CONSTANT PRICES

Year	Primary Industry	Secondary Industry	Tertiary Industry	Total GNP	(%) Change
1949	389	87	317	793	...
1950	357	57	268	682	-14.0
1951	301	48	290	639	-6.4
1952	284	69	339	692	+8.2
1953	368	110	391	870	+25.7

SOURCES.—Bank of Korea 1952-55, and 1963.

NOTE.—This is a value-added concept of GNP. Primary industry consists of agriculture, forestry, and fishery. Secondary industry includes mining, quarrying, manufacturing, and construction. Tertiary industry includes utilities, transportation, mercantile, finance, imputed value of the ownership of dwellings, public administration including defense, services, and net foreign expenditures.

²³ The rate of exchange proper went from 60 to 80 piasters per dollar. To this was added the economic consolidation surtax of 38 piasters per dollar, making an effective exchange rate of 118 piasters per dollar. However, for tariff purposes, the 80 per dollar rate was used.

TABLE 13
INDEX OF DOMESTIC PRODUCTION, 1964-68

	1964	1965	1966	1967	1968
Agriculture, forestry, hunting, and fishing (1957-59 = 100)	125.1	116.5	104.6	109.2	105.8
Mining and manufacturing (1962 = 100)	132.0	158.0	171.0	190.0	201.0

SOURCE.—Agency for International Development 1968.

decrease in rice production, which is still below its 1964 level even though it increased in 1967. Since manufacturing is largely in the protected urban centers, it has continued to expand during hostilities. Nevertheless, overall domestic production has decreased since American intervention in 1965, and this has had an adverse impact on stabilization.

F. An Additional Stabilization Tool

The attempt to stabilize prices by instituting what John Gurley (1952) has classified as a type-three currency reform was applicable only to Korea. In February 1953 the money supply was reduced directly by instituting a new unit of account worth 1/100 of the old unit. A portion of the money supply, measured on a progressive scale according to the total amount of an individual's or company's holdings, was then blocked and could not be used. The immediate effect of these actions was to reduce the price index slightly during April and May. But, because little had been done to curb the excess demand, the inflation continued. Moreover, "such a severe stringency developed in funds for the conduct of current industry and business that the Bank of Korea was authorized by the Monetary Board to take exceptional measures and provide considerable loans to enable some firms to continue operations" (United States Armed Forces Far East 1953, p. 7). It was further reported that "paralysis of some business operations because of lack of funds necessitated granting of loans to large firms of amounts not exceeding blocked deposits but nevertheless, in such volume as to almost negate the reduction in note issue brought about by the currency conversion" (United States Armed Forces Far East 1953, p. 9). It was estimated that about 8 percent of the money supply outstanding at the time of conversion remained frozen as of June 30, 1953. This was more than offset by a 23 percent increase in the money supply from December 1952 to June 30, 1953 (Office of Public Information 1955a, pp. 251-52). Any wealth effect from this reform appears to have been limited, and since the conversion occurred at the concluding stages of the

war, the stabilization effort did not benefit. It did, however, aid the government in the collection of back taxes and the investigation of tax evasion, and it reduced the bulkiness of money needed for everyday transactions.

G. *The Experience with Velocity*

An important variable in any stabilization program and one over which authorities exercise only indirect control is the velocity of money. As shown by Cagan (1961), velocity is crucially dependent upon expectations of price changes. Changes in velocity can hamper severely any attempts to curb inflation. Despite data limitations, the evidence below indicates that, while velocity did change significantly in Korea, it has not been a problem in Vietnam.

Korea

The Korean velocity experience (see table 14) corresponds to the explanation given by Cagan (1961, pp. 73–77, 86–88). In the early part of the war, the expansion of monetary demand and the fall in domestic output caused the rate of price increases to rise above that experienced in the pre-war period. However, it is sometime after a change in the actual rate of price inflation before individuals expect the new rate to continue long

TABLE 14
VELOCITY INDEX ESTIMATE FOR KOREA, 1949–55

	1949	1950	1951	1952	1953	1954	1955
Gross national product in billions of current hwan . . .	12.6	16.3	102.0	238.0	374.0	505.0	950.0
Imports of goods and services in billions of current hwan	3.1	1.5	7.1	13.2	43.4	45.9	61.5
Total	15.7	17.8	109.1	251.2	417.4	550.9	1,011.5
Less: Exports of goods and services in billions of current hwan	0.1	0.3	0.5	0.6	1.0	1.4	2.5
Goods and services available for sale at current prices . .	15.6	17.5	108.6	250.6	416.4	549.5	1,009.0
Index of goods and services available for sale at current prices, 1949 = 100	100	112	696	1,606	2,669	3,522	6,468
Index of the money supply 1949 = 100	100	200	512	1,117	2,405	4,567	7,476
Index of velocity	1.0	0.56	1.36	1.44	1.12	0.77	0.87

SOURCES.—Bank of Korea 1952–55 and 1963; Economic Planning Board 1962. Index number represents the average money supply for the year.

NOTE.—Imports and exports converted from dollars to hwan at the official rate of exchange.

enough to make adjustments in their cash balances worthwhile. The longer it is expected that the new rate will continue, the more likely it is that cash holdings will be considerably reduced. It is during this period of revised expectations that actual cash balances run ahead of their desired magnitude. This will initially cause velocity to fall as it did in Korea during 1950. However, once people revise upward their expectations of future price inflation based upon what actually happened, the lag in adjusting actual cash balances to the desired level is generally of short duration. When such an attempt to restore equilibrium is made, velocity will rise and further destabilize the situation. There can be little doubt that this was the course of events in Korea.²⁴ The sharp increase in prices from mid-1950 to mid-1951 was almost as great as the rise in the previous five years. It surely caused expected prices to increase and was of such a magnitude that the inducement to adjust cash holdings to a lower level was great.

Unlike the cases documented by Cagan, hyperinflation did not develop in Korea during the war. Accounting for this favorable experience were the reduction in the rate of money creation which accompanied the completion of the military buildup by the U.N. command, the implementation of the import program in late 1952, the decrease in the rate of decline in domestic output in 1951 and its revival and expansion in 1952 and 1953, and the restoration of confidence following the stabilization of the military situation.

In order to estimate the expenditure velocity index shown in table 14, the value of goods and services available for sale in current prices must first be calculated. In Korea this has been accomplished by taking gross national product in current hwan, adding to it the value of goods and services imported in current prices, and subtracting the current value of goods and services exported. An index was then constructed showing the net value of goods and services available for sale at current prices. This index would represent the price-real income portion of the familiar equation of exchange. Once the money supply index was constructed, division of the former index by the latter yielded the index of expenditure velocity.

Vietnam²⁵

While no GNP series exists past 1965, it will be possible, by making several reasonable assumptions, to arrive at an index of goods and ser-

²⁴ An additional factor in Korea which might have explained the flight from money was the precarious nature of the military situation. The U.N. command was almost expelled from the Korean Peninsula early in the war, and the entry of the Chinese forces in 1951 caused a marked retreat below the thirty-eighth parallel. The uncertainty of the military situation could have caused the flight from money to goods.

²⁵ The work in this section owes a great deal of the imaginative thinking of Dr. William Perkins and Mr. David Hemenway.

vices available at current prices from which an estimate of velocity may be made. This is done by first obtaining an estimate of gross domestic product (GDP) to which is added the excess of imports over exports. Since values for the money supply are readily available, it will then be possible to deduce what has happened to expenditure velocity.

The GDP in both current and constant prices is available for 1963 through 1965. From personal inspection of the data on agricultural and industrial production (see table 13) and government expenditures in constant prices, which constituted the industrial origins of over 62 percent of GDP in 1964,²⁶ it was concluded that real GDP probably decreased a little in 1966 and rose modestly in both 1967 and 1968. Based upon this, best-guess piaster values were assigned in order to complete the GDP constant-piaster series for 1966 through 1968.²⁷

Second, advantage was made of a relationship between the GDP deflator and the consumer price index for lower-class families in Saigon. When the former series is divided by the latter for the years 1963 through 1965, the respective quotients are 104, 105, and 106.²⁸ Assuming this relationship to hold in the following three years, the series was extended at values of 107, 108, and 109. Dividing this series into the CPI for lower-class families completes the GDP implicit price deflator series for 1966 through 1968. The GDP implicit price deflator series is then multiplied by the GDP at constant prices to yield the GDP at current prices series (see table 15).

The excess of imports over exports was added to the series of GDP in current prices to yield an estimate of goods and services available for sale (table 16).

From table 16 it can be concluded that changes in velocity have not been destabilizing in the Vietnamese case. While this conclusion rests on several shaky assumptions, several other pieces of evidence tend to support it. First, there has been an almost one-to-one relationship between changes

²⁶ The first two categories were 32 and 11 percent, respectively, with government expenditures accounting for 19 percent of the total.

²⁷ Crucial to the assignment of these values was the method used to measure real government expenditures. A suitable price index for accomplishing this does not exist. However, since most of these expenditures were for wages and salaries and, as noted above, these have lagged behind price increases, the consumer price index for lower-class families (used in table 4) was converted to serve as the deflator. This was done by keeping the rate of increase in that index to one-half the actual average annual increase. Applying this index to the current piaster expenditures of the government yielded a real value time series which rose in 1965, declined slightly in 1966, and rose again in both 1967 and 1968. These increases in real public sector expenditures and manufacturing output, when weighted by the approximate importance of each sector, were taken to offset the rather significant decline in the important agricultural sector (see table 13). It also must be remembered that the large increase in the Vietnamese armed forces during the 1965-68 period was not in the regular forces but in the militia-type regional and popular forces which were paid almost nominal amounts. Thus it was possible to add significant numbers of the military forces at a very modest increase in the government budget.

²⁸ For 1960 through 1962, the respective numbers were 101, 102, and 103.

TABLE 15
ESTIMATED VIETNAMESE GROSS DOMESTIC PRODUCT, 1963-68

	1963	1964	1965	1966	1967	1968
1. GDP at current prices (billions of piasters)	101	115	142	239*	364*	475*
2. GDP at 1960 constant prices (billions of piasters)	90	100	106	105†	110†	114†
3. GDP implicit price deflator line 1/line 2	112	115	134	228‡	331‡	417‡
4. CPI for lower income families in Saigon (1959 = 100)	117	121	143	244	357	454
5. Ratio of line 4/line 3	104	105	106	107§	108§	109§

SOURCES.—National Institute of Statistics 1967, 1968.

* Derived by multiplying line 2 by line 3.

† Assumed numbers based upon inspection of domestic production (see table 13) and real government expenditures which constituted over 62% of the industrial origin of GDP in 1964.

‡ Derived by dividing line 4 by line 5.

§ Extension of the series based upon the assumption that the existing pattern continued from 1966 through 1968.

in the money supply and changes in the price level. Given an almost unchanged real GDP over the 1963-68 period, the net difference between imports and exports appears to have been offset by changes in velocity making the near-proportional relationship possible. Second, if people had expected runaway inflation, they could have shifted into dollars or gold,

TABLE 16
VELOCITY INDEX ESTIMATE FOR VIETNAM, 1963-68

	1963	1964	1965	1966	1967	1968
Gross domestic product in billions of current piasters	101	115	142	239	364	475
Imports of goods and services in billions of current piasters	41	44	52	89	107	109
Total	142	159	194	328	471	584
Less: Exports of goods and services in billions of current piasters ...	16	15	24	57	64	61
Goods and services available for sale in billions of current piasters	126	144	170	271	407	523
Index of goods and services available for sale at current prices, 1963 = 100	100	114	135	215	323	415
Index of the money supply 1963 = 100	100	119	179	265	349	499
Index of velocity	1.0	0.96	0.75	0.81	0.93	0.81

SOURCES.—Agency for International Development 1967, 1968.

NOTE.—For derivation of GDP in billions of current piasters see table 15.

which are freely available on the black market. Yet, AID weekly price quotations for these two stores of value have been remarkably steady from the 1966 devaluation through 1968, with some of the observed upward movement being accounted for by developments in the world price of gold and its substitute relationship with the dollar. Third, recent work on demand for money in Vietnam by Stroup and Frazer (1969) shows that at least with 1964 data, the income elasticity of demand for money was greater than unity.

Last, Cagan's explanation also has relevance to this situation. Accompanying the initial U.S. buildup was a rapid expansion of the money supply, and the rate of price increase in 1965 was markedly above that previously experienced. During the period of expectation formation, actual cash balances ran ahead of desired balances and velocity fell (see table 16, figures for 1965). However, the prompt implementation of the import program and the confidence, created by the U.S. troop presence, that the piaster would not be repudiated were factors which convinced many Vietnamese that the price increases of 1965 were transitory in nature and that the rate of price increase would fall in the near future. This decline in the rate of increase was no doubt responsible for the fact that while velocity rose in 1966 and 1967, it only returned to approximate what it had been prior to the U.S. intervention.

Of final interest is the relevance of the classical price-specie flow doctrine to these two stabilization efforts.²⁹ According to this doctrine, in an open economy relatively high rates of inflation induce balance-of-payments deficits. Persistent deficits reduce the reserves of the banking system, thereby shrinking the money supply by some multiple which, in turn, reduces the available financing of the excess demand. This ultimately decreases the rate of inflation and serves as a means of restoring external equilibrium. The inapplicability of this mechanism to Korea and Vietnam arises from the fact that large and persistent balance-of-payments deficits have not served as a constraint on domestic policies. This is because the size of the deficits has been largely continued for stabilization purposes and their financing, especially in the Vietnamese case, has been consciously and continuously provided for by the United States. Thus, bank reserves and the money supply have been largely immune from balance-of-payments considerations and relatively high rates of inflation can continue.

IV. Summary

The purpose of this paper has been to show how significantly the United States could control inflation in two underdeveloped nations during war-

²⁹ Most inflation models are developed in a closed economy context (see Bronfenbrenner and Holzman 1963 and Johnson 1967*b*).

time. As such, it involved an inquiry as to the sources of the inflationary pressure, the important stabilizing role of imports in augmenting a diminished domestic production, the inconclusive role of the tax system in each nation as a stabilization tool, the limited assistance offered by monetary policy, and the problem posed by velocity changes.

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