

A.I.D. DISCUSSION PAPER NO. 11

**AN EVALUATION
OF U. S. ECONOMIC AID
TO FREE CHINA, 1951-1965**

NEIL H. JACOBY

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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C.

Bureau for the Far East

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University of California
at Los Angeles

A.I.D. Discussion Papers are circulated for the information of the addressees and their staffs. These papers are intended to serve several functions: to improve knowledge of analytical studies, research results and assistance policies among Agency personnel; to encourage the careful recording and analysis of Agency experience and problems of persons currently engaged in them; and, to share such experience and ideas with interested persons outside of the Agency.

These papers are designed to stimulate and serve as background for discussion. They represent the views of the authors and are not intended as statements of Agency policy.

January, 1966

PREFACE

This study is the first comprehensive attempt to analyse the results of a major economic aid program in a developing country.

The case chosen is of interest in itself. United States economic assistance to the Republic of China on Taiwan was large - \$1.4 billion over the period 1951-1965 - and successful in helping free China achieve self-sustaining economic growth. The story of economic progress on Taiwan - and of the contribution made by American assistance - offers lessons of much interest to those concerned with development in the low-income countries.

But there is more here than a case study. In the absence of accepted standards of measurement, Dean Jacoby had to construct his own tests for deciding whether or not aid had been useful. This is not as easy as it might seem - the problem is to compare what actually did happen, with aid, with what might have happened, without aid. In tackling this job, Dean Jacoby has imaginatively used analytical methods varying from informed judgment to mathematical model-building, and in so doing has placed all development economists in his debt.

This report was commissioned by the Agency for International Development. We invited Professor Neil Jacoby, Dean of the Graduate School of Business Administration, University of California at Los Angeles, to review the U.S. aid program to the Republic of China on Taiwan, to give us his judgment on our successes and failures there,

and to draw whatever lessons he thought warranted that might help us in improving the effectiveness of aid programs in other countries. We offered Dean Jacoby full access to files and personnel, and made it plain that we expected an independent, tough-minded evaluation, and that we were as interested in learning from our mistakes as from our successes.

The result was a thorough and objective report which has already been of great value to A.I.D., and which will be of continuing use for years to come. We in A.I.D. do not agree with every point in Dean Jacoby's analysis - in some cases we think he has been unduly mild in his judgment of past performance, in other cases unduly harsh - but we admire the careful and thoughtful methods he used; and we respect the independence of his judgments. We are glad to have played a part in producing what we consider to be something of a milestone in the study of economic development.

This publication is a summary report made by Professor Jacoby to A.I.D. A longer and more detailed document, Aid to Free China, is expected to be published in the near future.

David S. Bace

Washington, D. C.
January, 1966

FOREWORD

This is a report of the findings and conclusions reached as a result of the work of the Taiwan Aid Evaluation Team, of which the author served as Chairman. It is submitted to the Agency for International Development to complete the author's obligation as a consultant. In accordance with AID's request, the report has been written in summary form. It contains a minimum of supporting data and argument, so that conclusions stand out clearly and are quickly accessible to AID's staff members in Washington and in missions throughout the world. Supporting Appendices have been prepared, which are available to interested readers. The essential lessons to be learned from the Taiwan experience with U.S. economic aid are briefly recapitulated in Chapter XVIII.

In submitting this report, I would emphasize three points.

This is a pioneering study, in that it is the first effort to evaluate the internal structure of a country aid program from its beginning to its end. A methodology had to be designed de novo.

The study was made under severe pressures of time, less than a year elapsing from the initiation of plans to the submission of this document. More extensive inquiry into some aspects of the subject, such as the economic consequences of the Chinese military establishment and of the MAP, would have been worthwhile, but were precluded by want of time.

The study was completed only with the devoted efforts of the Taiwan Aid Evaluation Team, the logistical support provided by AID/Washington, and the wholehearted cooperation of officials of the Government of the Republic of China and the U.S. Aid Mission in Taipei.

I am grateful to a host of Chinese and American friends and collaborators for their assistance. While it would take an undue amount of space to name them all herein, the contributions of Dr. Richard L. Hough demand special note. As Deputy Chairman of the Evaluation Team, he rendered invaluable assistance at all stages of the project; and carried the brunt of the analysis of the effects of U.S. aid upon Taiwan's social and political development. The work of Mr. Allen Goldstein, particularly in the sectoral allocation of aid and in the evaluation of aid projects, also was of signal importance.

I am grateful to AID Administrator David E. Bell and to Assistant Administrator Rutherford M. Poats, for giving me a free hand and full support in conducting the evaluation. Mr. Richard M. Kirby, Chief of the China Division of AID provided guidance and liaison services at all times. I also thank Chancellor Franklin D. Murphy of the University of California, Los Angeles, for granting me leave from my duties in the Graduate School of Business Administration during the first half of 1965 to undertake this assignment.

Although this report was prepared for AID, the content and conclusions are my own and not those of the Agency. I do not intend to diminish the value of the assistance received from others when I accept full responsibility for any errors or omissions in the report. While I cannot hope that all conclusions will find favor with every reader, I have conscientiously tried to be an impartial and objective critic of the Taiwan aid program. I hold in high respect those Chinese and Americans whose collaboration in Taiwan demonstrated the progressive force of free economic institutions. Sino-

American cooperation in the postwar development of Taiwan will long stand as a landmark in the history of international economic cooperation.

Neil H. Jacoby
Los Angeles, California
October 1965.

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NOTE TO THE READER

Unless otherwise specifically noted, the following terms and expressions frequently used herein have these meanings:

(1) "Free China," "Republic of China" and "Taiwan" are used interchangeably to refer to what is also known as Formosa, including the Pescadores, Quemoy and Matsu Island groups in the Straits of Formosa.

(2) "AID" is used generically to denote the Agency for International Development and its predecessor agencies before July 1, 1961, including the International Cooperation Administration (ICA), Mutual Security Agency (MSA), and Economic Cooperation Administration (ECA).

(3) "Year" means a fiscal year ending June 30th.

(4) "Rate of growth" or "growth rate" means an average annual compound rate of growth rather than an average of year-to-year percentage changes.

(5) "Period of U.S. aid" or "aid period" means the fifteen years elapsing between July 1, 1950 and June 30, 1965.

PART A

SCOPE AND METHOD OF STUDY

Chapter I. Nature and Purposes of the Study

1) This is a study of the relation of U.S. economic aid to the development of the Republic of China (ROC), from its beginning in the fiscal year 1951 to the termination of obligations, June 30, 1965. It seeks: (a) to develop methods for evaluating country assistance programs generally; (b) to evaluate the several statutory instruments of aid, the allocation of aid to different projects and sectors of Taiwan's economy, and the overall effects upon the country's economic, social and political development; (c) to derive lessons useful in designing and administering U.S. economic assistance policies in other countries.

2) The study assumes that U.S. economic assistance to other countries should be viewed as one instrument for strengthening our national security. In a fuller analysis, the benefits and costs of this instrument should be weighed against those of other available security instruments. That is not done in this study. The study accepts as data U.S. and Chinese political and military policies during 1951-1965, and does not assess U.S. security policies in the Western Pacific basin, Nationalist China's foreign political aims, or military missions, forces and expenditures. It does not evaluate the U.S. Military Assistance Program for Free China. It does estimate the effects of the military burden upon Taiwan's development.

3) Taiwan received a material fraction of global U.S. economic assistance during 1951-1965. The annual amount ranged from a high of 4.9 per cent of all U.S. aid obligations in 1955 to a low of 1.0 per cent in 1964. Within the Far East Region, Taiwan got 15 to 25 per cent of regional obligations in most years, but as much as 47 per cent during 1954 at the apex of the post-Korean War defense build-up.

4) The study contributes to scientific thought about the role of external assistance in development. Despite the great magnitude of assistance to the less developed countries by the U.S. and other advanced nations, there is a dearth of tested principles for designing and administering aid programs. By a systematic analysis of aid/development relationships in Free China, this study helps to bridge the gaps between development theory and policy.

5) The basic data of the study are existing statistics and studies, and depth interviews with Chinese and American decision makers.

6) The method of the study is quantitative to the degree permitted by the nature of the problems and available data; otherwise qualitative and judgmental. Its content is analytical and evaluative rather than descriptive.

Chapter II. Criteria and Methods of Evaluation

1) "Development" is an extremely complex socio-politico-economic process, and the impacts of external assistance upon this process are even more complex. Any feasible method of evaluating a country aid program must select for examination a limited number of strategic variables, causal and dependent, and concentrate upon an understanding of their relationships.

2) An ideal evaluation of a country assistance program would employ a tested theory of aid-development relations. It would measure the effects upon development of external aid, including its influence upon such self-help measures as the level of domestic savings and investment. However, there is no generally-accepted theory of development, or even accepted measures of political and social development to serve as guides--there are standard measures only of economic development. Although Dr. Hollis B. Chenery, formerly of AID, has made valuable macroeconomic analyses of aid/development relationships in several countries, this is the first effort to evaluate the internal structure of an entire country aid program from beginning to end.

3) This study adopts a pluralistic approach in evaluating external aid. It is assumed that confidence in the conclusions reached about the relative productivity of U.S. assistance--the degree of success attained--is justified to the degree that different criteria of evaluation point to the same conclusion.

4) The productivity of U.S. economic assistance to Free China was judged by seven criteria: (a) the announced goals of the U.S. and Chinese governments, (b) the overall rise in Taiwan's GNP per dollar of U.S. aid in relation to that in comparable Asian countries, (c) the overall rise in

Taiwan's output in relation to its own past performance, (d) the degree to which intersectoral allocations of aid approached theoretical optima, (e) the degree to which project selections obeyed rational economic rules, (f) the degree to which the instrumental structure of assistance approached the optimum, and (g) the conformance of actual aid administration to the practical optimum. Each of these criteria had certain theoretical limitations, confronted peculiar difficulties in application, and called for subjective judgment in interpreting the results.

5) Application of criteria of evaluation involved statistical analysis of the aid/development relationship at three levels of generality. They were (a) macroeconomic, involving comparisons of output/capital ratios and construction of hypothetical no-aid growth models, (b) intersectoral, employing both four-sector and two-sector models of Taiwan's economy, and (c) intrasectoral, utilizing stratified random samples of U.S. aid financed projects. In identifying U.S. and Chinese assistance goals, and in assessing the influence of U.S. aid upon GRC policies and self-help measures, published and confidential documents of the U.S. and Chinese governments were analyzed and extensive interviews were conducted with American and Chinese government officials, industrialists and academicians.

PART B

THE U.S. AID PROGRAM

Chapter III. Objectives of U.S. Economic Aid

1) During the initial years 1951-1955, the official objectives of economic assistance to Free China were economic stability, support of the joint military effort, and improving the country's capacity for self support. Development per se was not an explicit U.S. aim in AID presentations to the U.S. Congress.

2) After 1955, economic development progressively emerged as the dominant goal of U.S. assistance. Inflation came under control in Taiwan, and living standards recovered their pre-World War III levels by 1956. The Economic Stabilization Board was dissolved in 1958.

3) After 1960, the aim of phasing out concessional aid gradually came to the fore. There was mounting evidence of Taiwan's economic buoyancy and growing export capabilities. U.S. efforts thereafter focussed upon stimulating private investment in Free China, improving its international credit standing, and energizing the private sector of the economy.

4) There was a divergence between the statutory purposes and the real effects of aid to Taiwan. This led to an element of ambivalence. After 1955, AID and the GRC progressively sought rapid economic development; but the aid program was financed mainly by the instruments of Defense Support and Surplus agricultural commodities. Evidently, Congress was willing to vote large funds to strengthen military resistance to Communism, whereas it would not have accorded equal overt support to economic development--which may well have produced even larger U.S. national security values in the global conflict with Communism.

5) Chinese government aims in accepting economic aid underwent a parallel change. Convinced that disastrous price inflation had been a

primary cause of their downfall on the mainland, Chinese political leaders sought U.S. aid in the early years to bring about monetary and social stability for their regime. After 1956 their goal gradually shifted to the attainment of sustained economic progress and the building of a strong industrial base for military recovery of the mainland. Thus, there was a continuing identity most of U.S. and GRC objectives, but each country had certain aims not shared by the other.

Chapter IV. Character of the Aid Program

1) The U.S. financed a "heavy" program of economic aid to Free China. It involved annual obligations averaging almost \$100 millions over the fifteen-year period 1951-1965, and annual deliveries averaging about \$80 millions over the 18-year period 1951-1968. Aid was almost \$10 per capita per annum, averaged 6.4 per cent of Taiwan's GNP, formed 34 per cent of its gross investment, and covered 91 per cent of its aggregate net import surplus of goods and services. Except for Korea, Laos and South Vietnam, which were the sites of active warfare, Taiwan had the richest U.S. aid program in Asia. This reflected the high value for U.S. national security placed upon Free China's political stability and its military and economic strength.

2) The proportional relationship of aid to Taiwan's economy declined steadily throughout the aid period. Aid formed 10 per cent of the island's GNP in 1951, but was little more than 2 per cent of a vastly enlarged GNP in 1965. GNP rose greatly in the face of a fairly constant annual aid level--implying a growth in its multiplier effects through time.

3) The high average level of aid implicitly aimed at a high rate of economic growth and a minimum period of time to Taiwan's economic independence. Although this implied aid policy may have served U.S. national security interests well, the less costly alternative policy of a "light" aid program, supporting a lesser rate of economic growth, and requiring a longer time to complete, was not considered.

4) The basic--though implicit--determinant of the level of aid to Taiwan was the high economic growth rate planned by the Chinese government. It was not, as is commonly believed, the deficit in Free China's balance

TABLE IV - 1

U.S. Economic Aid Obligations to Taiwan, By Statutory Instrument, Annually FY 1951 - FY 1965

Unit: \$1 Million

	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>Grand Total</u>
I. Project Aid	13.7	13.4	21.4	31.7	36.1	28.1	42.9	29.7	55.4	33.6	24.4	8.2	2.0	59.5	0.0	400.7
Defense Support	11.4	10.2	16.0	23.1	23.6	24.7	39.3	26.6	22.0	10.7	5.7	-	-	-	-	213.3
Direct Forces	0.6	2.3	3.2	5.0	5.1	0.1	0.2	-	-	-	-	-	-	-	-	16.5
Technical Coop.	1.7	0.9	2.2	3.6	2.4	3.3	3.4	3.1	2.6	2.5	2.0	-	-	-	-	27.7
Development Grant	-	-	-	-	-	-	-	-	-	-	-	3.0	2.0	2.1	0.6	7.7
Development Loan	-	-	-	-	-	-	-	-	30.8	20.4	16.7	5.2	-	57.4	-	130.5
II. Non-Project Aid	69.7	69.5	79.2	76.6	95.9	73.5	64.0	52.0	69.1	74.5	72.9	59.1	82.6	84.0	42.1	1,034.7
<u>Agriculture</u>	<u>49.5</u>	<u>45.2</u>	<u>51.6</u>	<u>55.6</u>	<u>53.2</u>	<u>54.4</u>	<u>57.2</u>	<u>52.0</u>	<u>59.0</u>	<u>44.0</u>	<u>60.1</u>	<u>59.1</u>	<u>63.7</u>	<u>69.5</u>	<u>42.1</u>	<u>816.2</u>
Defense Support	48.7	42.3	45.5	43.6	43.1	35.4	30.9	33.3	36.4	30.7	29.7	-	-	-	-	419.6
Direct Forces	0.8	2.5	6.1	11.5	7.5	9.4	6.5	1.6	-	-	-	-	-	-	-	45.9
PL 480	-	0.4	-	0.5	2.6	9.6	19.8	17.1	22.6	13.3	30.4	59.1	62.9	68.3	42.1	349.2
Program Loan	-	-	-	-	-	-	-	-	-	-	-	-	0.8	0.7	-	1.5
<u>Non-Agriculture</u>	<u>20.2</u>	<u>24.3</u>	<u>27.6</u>	<u>21.0</u>	<u>42.7</u>	<u>19.1</u>	<u>6.8</u>	<u>-</u>	<u>10.1</u>	<u>30.5</u>	<u>12.8</u>	<u>-</u>	<u>18.9</u>	<u>14.5</u>	<u>-</u>	<u>243.5</u>
Defense Support	16.1	11.7	10.3	11.0	25.8	18.6	6.8	-	10.1	30.5	12.8	-	-	-	-	153.7
Direct Forces	4.1	12.6	17.3	10.0	16.9	0.5	-	-	-	-	-	-	-	-	-	61.4
Program Loan	-	-	-	-	-	-	-	-	-	-	-	-	13.9	14.5	-	33.4
III. GRAND TOTAL	83.4	82.9	100.6	103.3	132.0	101.6	106.9	81.7	124.5	103.1	97.3	67.3	84.6	143.5	42.7	1,455.4

Source: U.S. AID Mission to China, FY51-64: Actual Obligations as of June 30, 1964
 FY 65: Programmed as of April 15, 1965

TABLE IV - 1A

Percentages of Total U.S. Economic Aid to Taiwan Provided by Different Statutory Instruments,
Annually Fiscal Years 1951-1955

	1951	1952	1953	1954	1955	1956	1957	1958	1959	1950	1961	1962	1963	1964	1965	Total
I. Project Aid	<u>16.4</u>	<u>16.2</u>	<u>21.3</u>	<u>29.3</u>	<u>27.3</u>	<u>27.6</u>	<u>40.1</u>	<u>36.4</u>	<u>44.5</u>	<u>31.1</u>	<u>25.1</u>	<u>12.2</u>	<u>2.4</u>	<u>41.5</u>	<u>1.5</u>	<u>27.3</u>
Defense Support	13.7	12.3	15.9	21.3	21.7	24.3	35.8	32.6	17.7	9.9	5.8	-	-	-	-	14.6
Direct Forces	0.7	2.8	3.2	4.6	3.9	0.1	0.2	-	-	-	-	-	-	-	-	1.1
Technical Coop.	2.0	1.1	2.2	3.3	1.8	3.2	3.2	3.8	2.1	2.3	2.1	-	-	-	-	1.6
Development Grant	-	-	-	-	-	-	-	-	-	-	-	4.4	2.4	1.5	1.4	.5
Development Loan	-	-	-	-	-	-	-	-	24.7	13.9	17.2	7.7	-	40.0	-	3.0
II. Non-Project Aid	<u>83.6</u>	<u>83.3</u>	<u>78.7</u>	<u>70.7</u>	<u>72.6</u>	<u>72.3</u>	<u>59.9</u>	<u>63.6</u>	<u>55.5</u>	<u>68.9</u>	<u>74.9</u>	<u>87.8</u>	<u>97.6</u>	<u>53.5</u>	<u>98.5</u>	<u>72.7</u>
Agriculture	59.3	54.5	51.3	51.3	40.3	53.5	53.5	63.6	47.4	40.7	61.8	37.8	75.3	43.4	90.5	55.7
Defense Support	58.3	51.0	45.2	49.2	32.6	34.8	23.9	40.8	29.2	23.4	50.5	-	-	-	-	23.6
Direct Forces	0.9	3.0	6.1	10.5	5.7	9.2	6.1	2.0	-	-	-	-	-	-	-	3.1
PL 480	-	0.6	-	0.5	2.0	9.4	18.5	20.9	13.2	12.3	31.2	37.8	74.3	47.9	93.6	23.8
Program Loan	-	-	-	-	-	-	-	-	-	-	-	-	0.9	0.5	-	.1
Non-Agriculture	24.2	29.3	27.4	19.4	32.3	18.8	6.4	-	3.1	23.2	13.2	-	22.3	10.1	-	17.0
Defense Support	19.3	14.1	10.2	10.2	19.5	18.3	6.4	-	3.1	23.2	13.2	-	-	-	-	10.5
Direct Forces	4.9	15.2	17.2	9.2	12.8	.5	-	-	-	-	-	-	-	-	-	4.2
Program Loan	-	-	-	-	-	-	-	-	-	-	-	-	22.3	10.4	-	2.3
III. GRAND TOTAL	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

Source: Table IV - 1

international payments. Although AID justified to Congress annual levels of aid that would erase China's balance of payments deficits, these deficits appear to have been predicated upon a volume of investment sufficient to generate the rapid growth projected in the Four Year Plans of Development. The real deficit financed by the U.S. was an "investment program" deficit.

5) The high U.S. aid level nearly saturated the capacity of Taiwan to absorb investment productively. Given Taiwan's limited supply of technical, administrative and managerial talent, skilled workers and markets a larger amount of project assistance would have resulted in a sharp decline in its productivity.

6) Economic aid to Taiwan was composed of several partially coordinated elements. AID customarily emphasized the distinctions between (a) project and non-project aid and (b) statutory sources of aid funds. The statutory sources were Supporting Assistance (formerly known as Defense Support), Direct Forces Support, Food for Peace (PL 480 surplus agricultural commodities), Development Loans, and Development Grants-Technical Cooperation. Of more significance in revealing the relation of aid to development are analyses of (a) the nature of aid-financed imports, (b) the financial terms of assistance, and (c) the sectoral allocations of assistance financed by U.S. dollars and by the local currencies generated by aid imports.

7) Only about one-eighth of U.S. aid to Taiwan was justified to Congress on purely developmental grounds. Of total U.S. aid obligations of \$1,465 millions during 1951-1965, no less than 63 per cent (\$915 millions) was funded by Defense Support and Direct Forces Support, ostensibly to enable Taiwan to provide the economic conditions necessary to achieve common U.S.-Chinese military objectives. Another 24 per cent (\$349 millions) took

TABLE IV - 2

U.S. Economic Aid to Taiwan, Obligations and Arrivals, Annually 1951-1967

Unit: \$1 Million

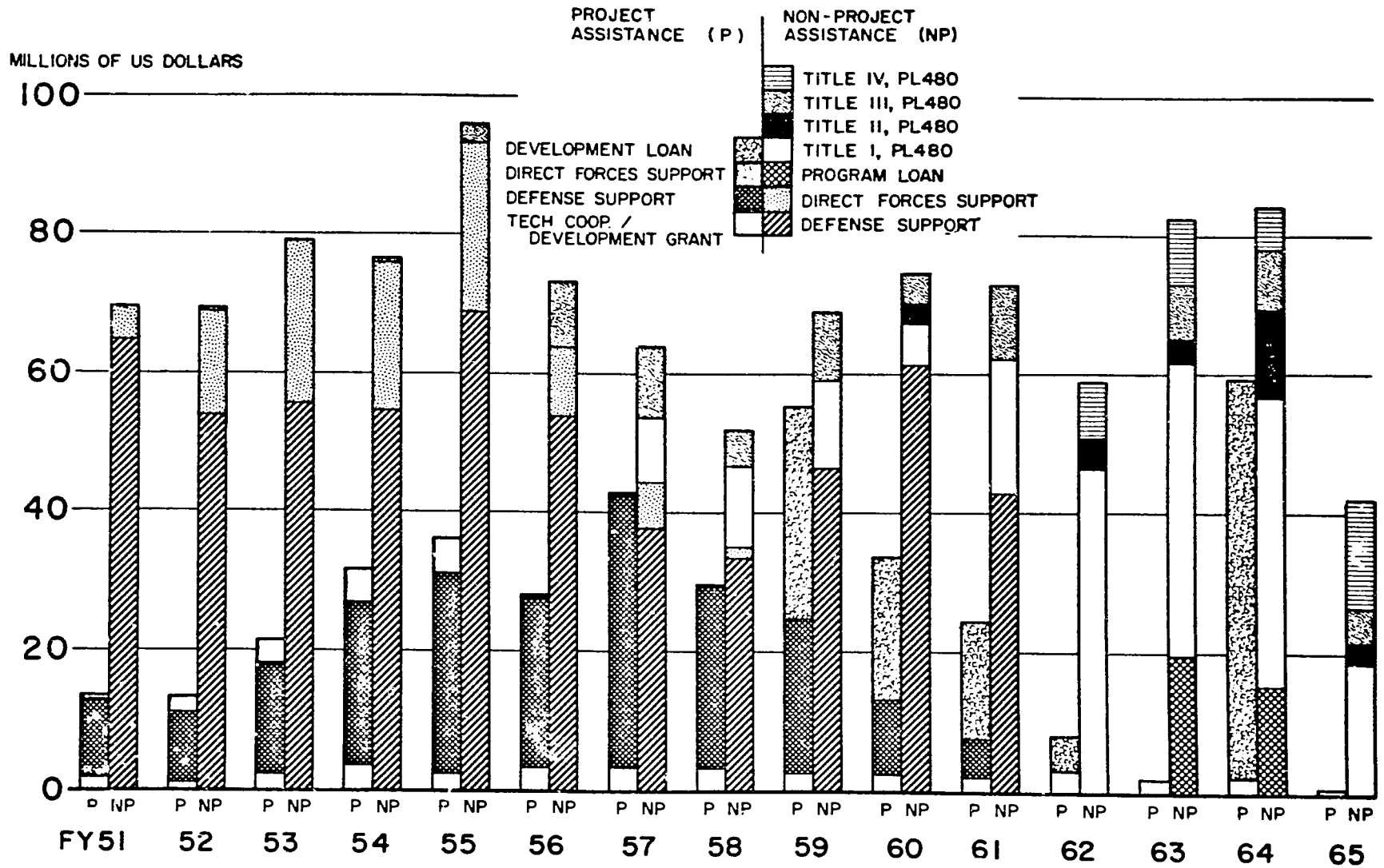
<u>Fiscal Year</u>	<u>Obligations</u>	<u>Arrivals</u>
1951	\$ 83.4	\$ 37.1
1952	82.9	91.2
1953	100.6	86.1
1954	103.3	75.6
1955	132.0	94.5
1956	101.6	105.4
1957	105.9	100.3
1958	81.7	101.4
1959	124.5	95.6
1960	103.1	88.5
1961	97.3	123.3
1962	67.3	112.6
1963	84.6	89.5
1964	143.5	67.0
1965 ^P	61.5 ^P	83.2
1966 ^{a/}	32.3	82.0
1967 ^{a/}	-	50.7
Total	\$1,497.7 ^{b/}	\$1,489.0 ^{b/}

P - Preliminary

^{a/} FY 1965, 66, 67 figures are estimates based upon a projection of unliquidated obligations at the end of FY 1964.

^{b/} The variance of \$8.7 million in the total obligations and arrivals is largely the result of the fact that the former figures were obtained from USAID/C and AID/W sources while the latter were obtained from the records of CIECD. USAID/C did not keep separate records on arrivals.

STATUTORY TYPES OF US AID OBLIGATIONS FY1951-FY1965



the form of Food for Peace surplus agricultural commodities, in which the primary Congressional motive was disposal. About 11 per cent (\$165 millions) was Development Loans (capital projects and Program Loans), and about 2 per cent (\$36 millions) was Development Grants and Technical Cooperation.

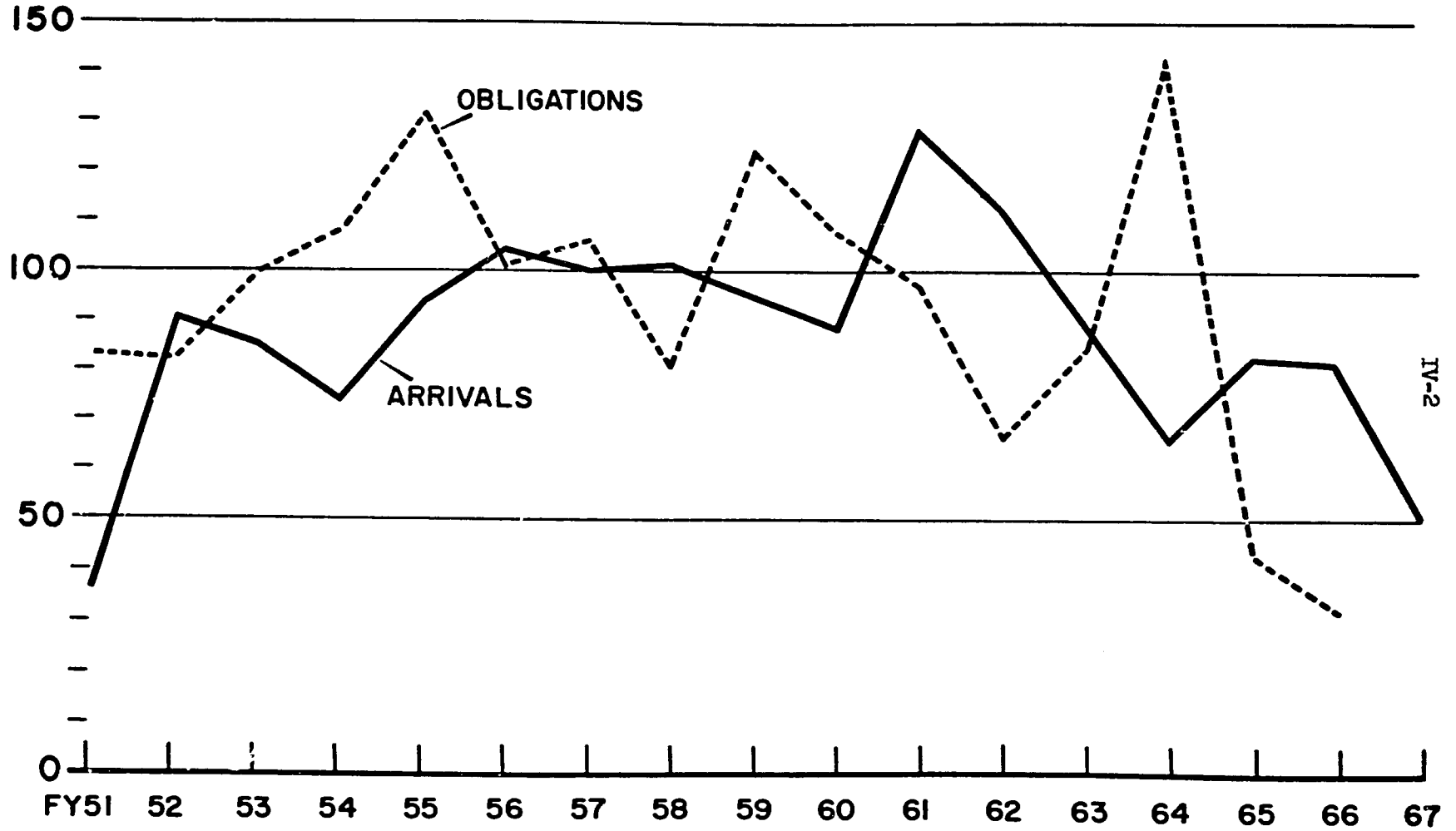
8) Little more than one-quarter of U.S. aid to Taiwan was "project" assistance (\$410 million or 27.4 per cent). The balance (\$1,065 million or 72.6 per cent) was "non-project" aid in the form of surplus agricultural and other commodities imported to meet estimated domestic needs. Because the U.S. financed through the 1950's virtually all plausible requests made by the GRC for investment projects, "non-project" aid both freed Chinese resources for investment and helped to lift governmental and private consumption above the levels they would otherwise have reached.

9) Major shifts were made in the statutory sources of assistance over the 15-year aid period. They were: (a) steady decline and phasing out of Defense Support and Direct Forces Support in 1961, (b) a build-up of Food for Peace imports after 1954 similar to Defense Support commodities, and (c) the utilization of Development and Program Loans during the 1958-1965 period. Because these changes were not closely related to changes in real resource inputs into Taiwan, they had limited economic significance. Technical assistance and Development Grants were steadily used throughout the aid period up to the 1960's.

10) The real inputs of U.S. aid into Taiwan's economy were imports of capital goods, industrial materials, consumer goods, and human capital (technical services and participants). Industrial materials consistently formed about 40 per cent of all imports into Taiwan; capital goods gradually.

US AID TO TAIWAN OBLIGATIONS AND ARRIVALS

MILLIONS OF US DOLLARS



IV-2

rose from around 20 per cent to 30 per cent, and consumer goods fell from around 40 per cent to 30 per cent. For U.S. aid imports, industrial materials declined from around 60 per cent to 30 per cent, capital goods rose from around 15 per cent to 40 per cent, and consumer goods were in the range of 50 per cent. Non-aid imports generally displayed trends opposite to those of aid-financed imports. These changes reflected both the pattern of joint Chinese-U.S. coordination of imports and the industrial development of Taiwan.

11) Eighty-three per cent of all U.S. dollar aid was granted, and nearly all of the balance was loaned on "soft" terms repayable in New Taiwan dollars. The financial terms of aid to Free China, which along with the amount, determined the true level of concessional assistance were extremely generous. The concessional element per dollar of aid also depended upon whether the recipient was required to pay for aid imports by depositing local currencies in special accounts, and whether such funds could be granted or loaned. While a local currency deposit did not impose any external burden on Taiwan, it did restrict the use of local resources by the GRC. During the initial five years, 1951-1955, all U.S. aid was an outright grant. Beginning in 1959 Development Loans and Grants were made at very low interest rates. U.S. dollar-repayable loans were introduced toward the end of the aid period. However, aid-generated NT dollar assistance to revenue-producing enterprises was put on a loan basis early in the 1950's.

12) The Local Currency Program--developmental investments financed by the local currencies generated from U.S. dollar aid--formed a vital part of

TABLE IV-3

Allocations of U.S. Economic Aid to Sectors of Taiwan's Economy, 1951-1965

	<u>U.S. Dollar</u>		<u>NT Dollar</u>		<u>Total</u>	
	<u>Amount</u>	<u>Per cent</u>	<u>Amount</u>	<u>Per cent</u>	<u>Amount</u>	<u>Per Cent</u>
Infrastructure	\$235.9	44.3	\$171.1	30.6	\$ 407.0	37.3
Agriculture	56.1	10.5	179.0	32.0	235.1	21.5
Human Resources	140.7	26.4	142.5	25.5	283.2	25.9
Industry	100.1	18.8	66.2	11.9	166.3	15.3
Total - Four Sectors	\$532.8	100.0	\$558.8	100.0	\$1,091.6	100.0

Source: See Appendix B - Intersectoral Allocation of U.S. Economic Aid Funds to Taiwan - for explanation of sources and methods of deriving non-duplicating allocations of U.S. dollar and NT dollar project assistance among sectors.



FINANCIAL TERMS CLASSIFICATION OF AID INSTRUMENTS

FY1951 - FY1965

MILLIONS OF U. S. DOLLARS

150

100

50

0



U. S. \$ HARD LOAN (REPAYABLE IN U. S. \$ WITH INTEREST OVER 3½%)

U. S. \$ SOFT LOAN (REPAYABLE IN U. S. \$ WITH INTEREST AT 3½% OR LESS)

U. S. \$ SOFT LOAN (REPAYABLE IN NT\$)

U. S. \$ GRANT

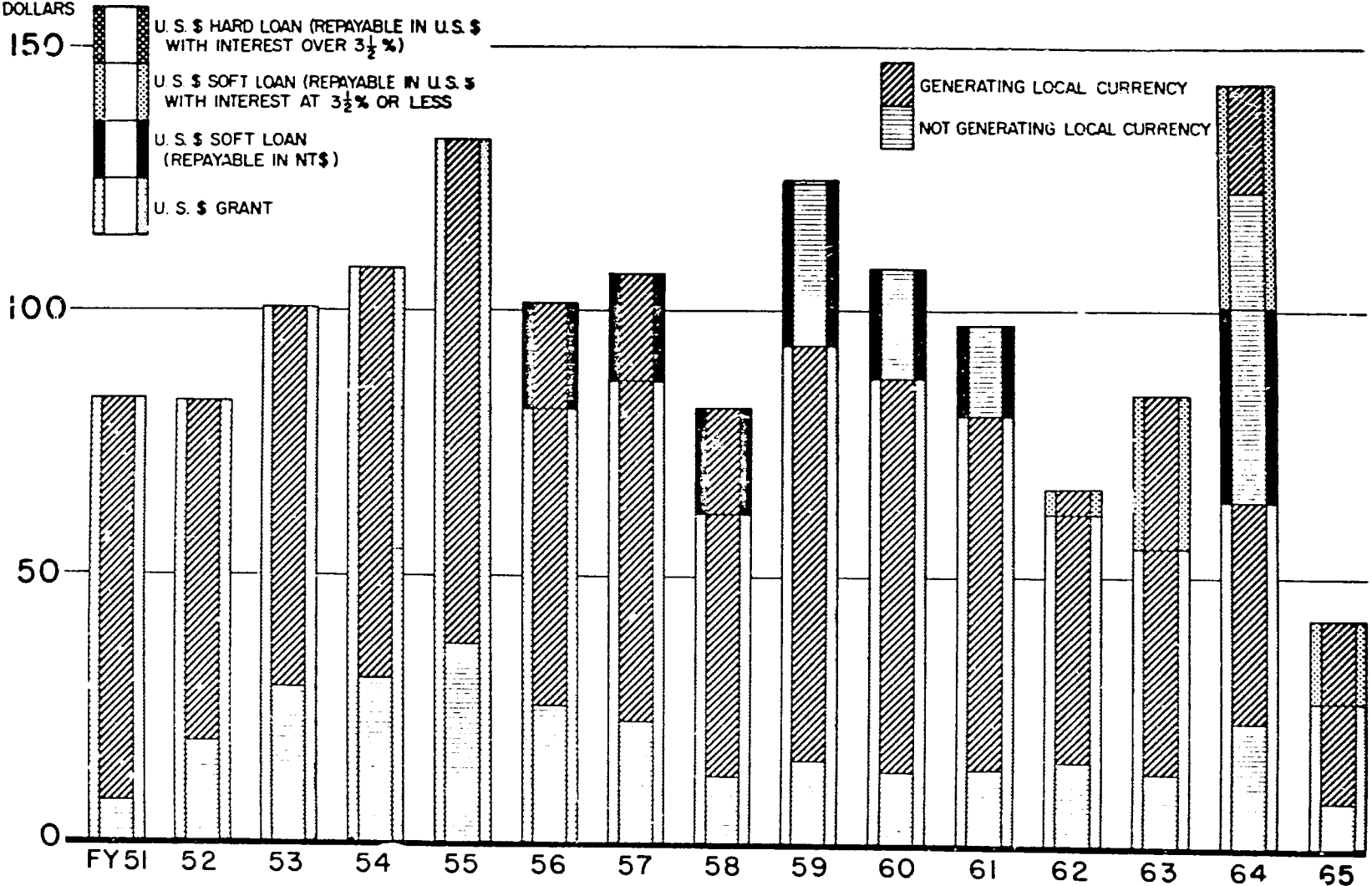


GENERATING LOCAL CURRENCY

NOT GENERATING LOCAL CURRENCY

FY51 52 53 54 55 56 57 58 59 60 61 62 63 64 65

IV-3



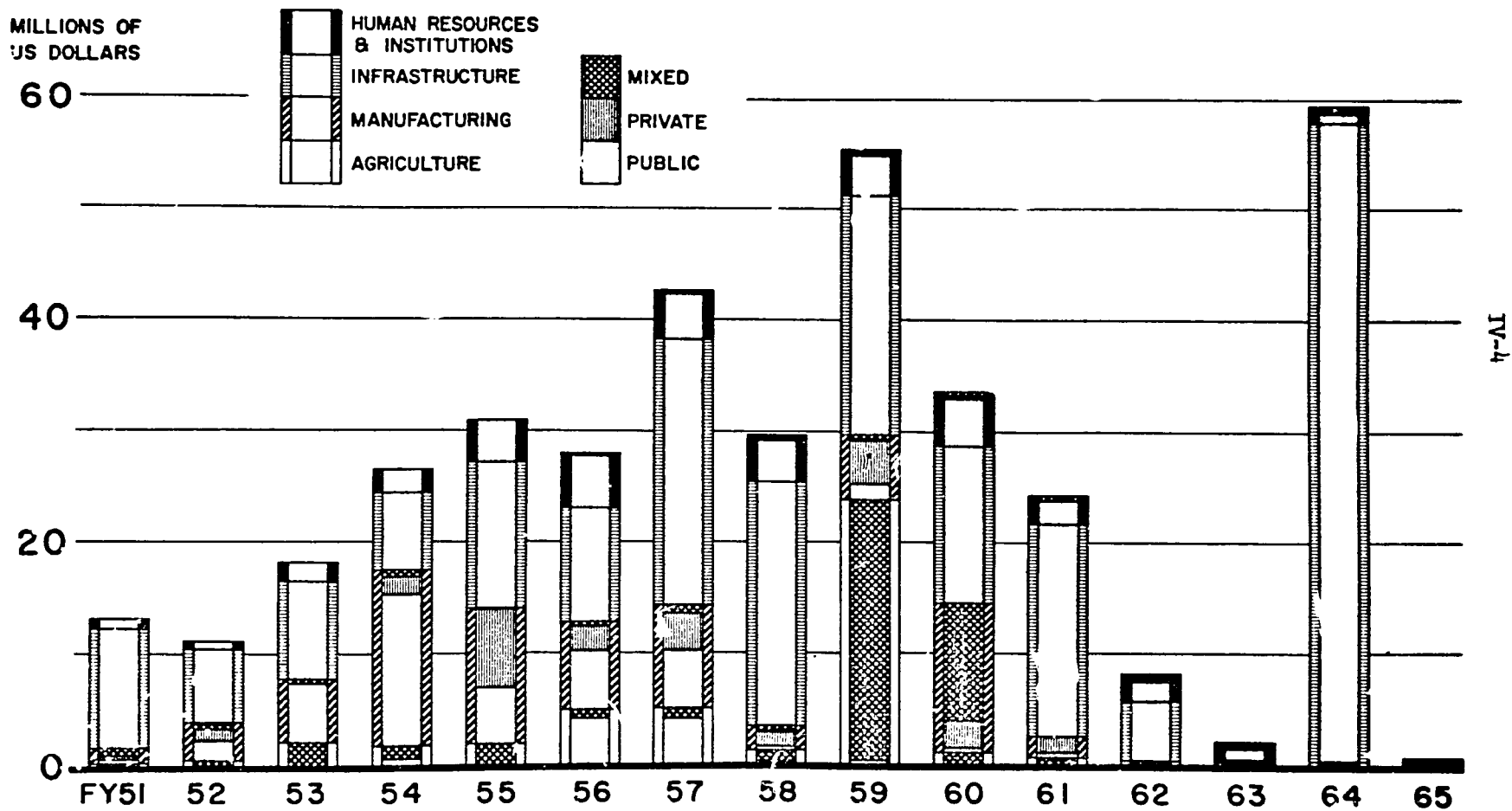
the aid program. It is a mistaken view that local currency funds had negligible effects upon the level and composition of domestic investment and economic growth because they did not inject new resources into Taiwan's economy. In fact, the \$651 million equivalent of aid-generated local currency allocated to support development projects--an average of nearly \$43 million a year--financed the core of all governmental capital formation in Taiwan. It raised the level of national investment by requiring "matching" funds from other sources for each project. Joint U.S.-GRC control of local currency uses enabled the U.S. government to exert strong influence upon the allocation of investment and to raise its productivity.

13) At the termination of aid commitments in mid-1965, unallocated local currency funds equivalent to \$63.6 million were paid into a newly established Sino-American Fund for Economic and Social Development, to be administered by the GRC. Together with anticipated collections of interest and principal on previous local currency loans, these were expected to make available almost \$250 million for development financing over the next five years. This would, in effect, sustain the operation of the Local Currency Program at about the same level over the period 1965-1969.

14) At the termination of aid commitments Free China was scheduled to receive an estimated \$97.3 millions of previously committed U.S. dollar aid. This was enough to sustain aid inputs into Taiwan at about the level of 1965 for two more years.

U. S. DOLLAR PROGRAM - PROJECT ASSISTANCE

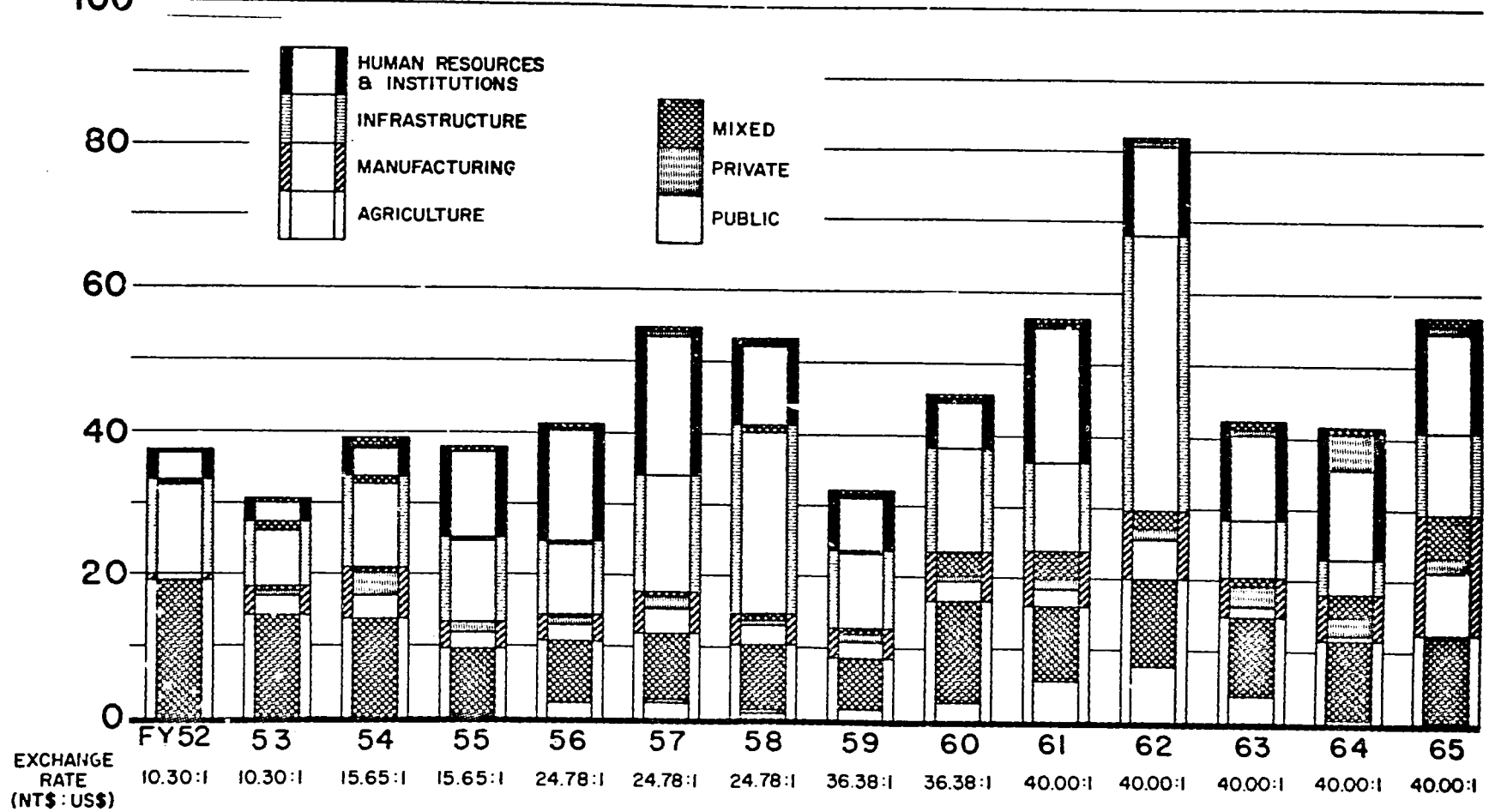
FY1951 - FY1965



IV-5

LOCAL CURRENCY PROGRAM FY1952 - FY1965

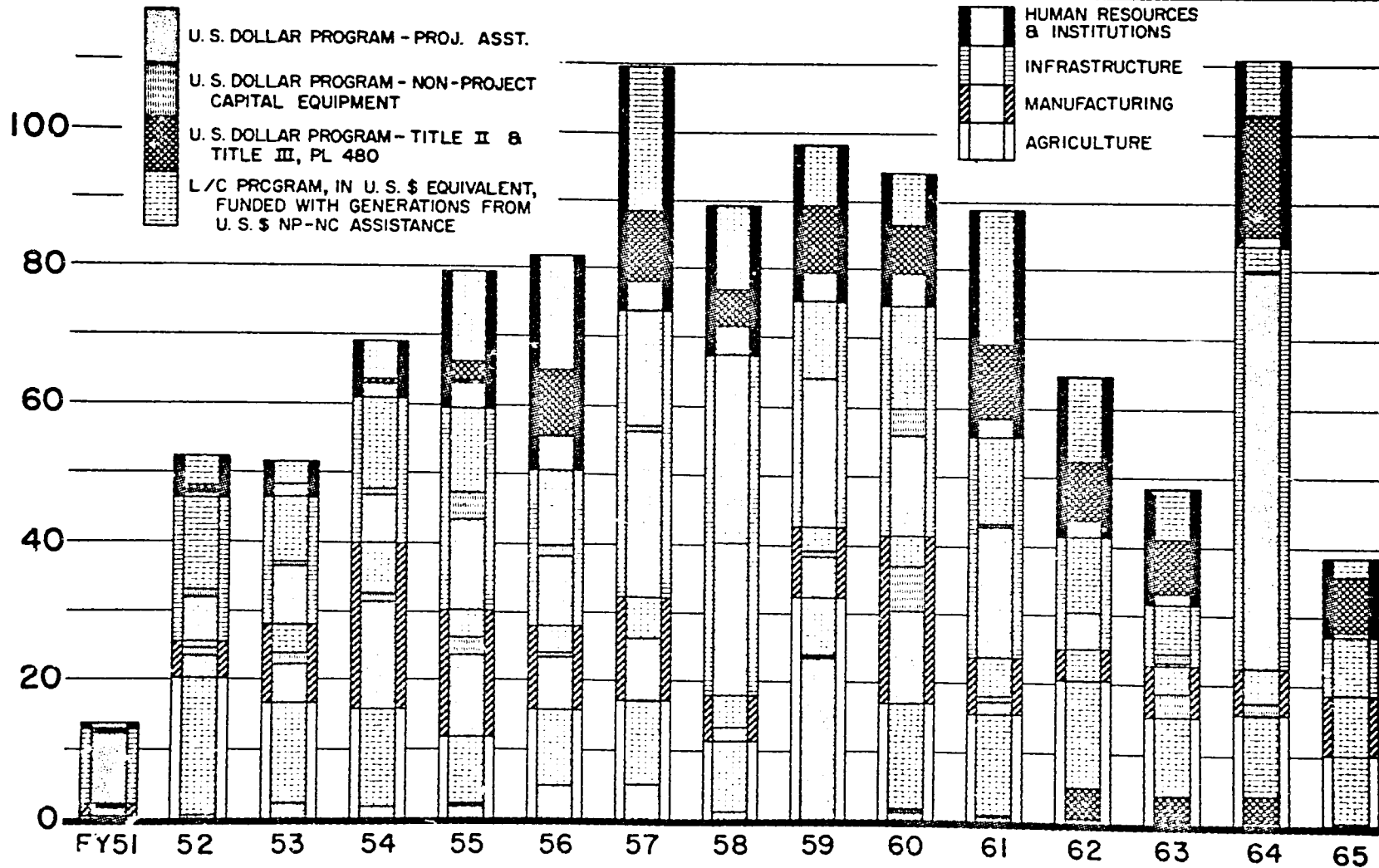
MILLIONS OF
US DOLLARS (CONVERTED AT EXCHANGE RATE
PREVAILING AT TIME OF OBLIGATION)



IV-5

TOTAL U. S. ASSISTANCE (RESOURCE INPUTS) BY FOUR SECTORS

MILLIONS OF
US DOLLARS
120



Chapter V. Organization and Institutions of Aid

1) The Agency for International Development (AID) is one branch of the U.S. national security structure. This structure also includes the Department of State (within which AID is located), the Department of Defense, the Central Intelligence Agency, and the U.S. Information Service, all of whose policies are coordinated world-wide by the National Security Council under the chairmanship of the President of the United States. Administration of aid to Taiwan thus involved a set of decisions subordinate to higher-order decisions on allocation of funds among (a) major agencies of national security, (b) the Far East versus other regions of the world, and (c) Free China versus other countries in the Far East region.

2) Within Taiwan the economic aid program was administered by the U.S. aid Mission in Taipei. Its operations were coordinated locally with those of other U.S. national security agencies by the Country Team, composed of heads of missions meeting under the chairmanship of the U.S. Ambassador to the ROC.

3) The Director of the aid Mission to China was under formal control of AID/Washington. In fact, he exerted broad influence upon the character of the country aid program and its mode of organization and administration.

4) The internal organization of the China aid Mission changed to reflect new objectives. During the first decade, when numerous aid projects were of major concern, aid organization was based upon sectors of Taiwan's economy. There were numerous operating divisions, including Natural Resources, Power, Education, Public Administration, Trade and Industry, etc., each manned by specialists. After the primary U.S. objective had shifted to private sector development and aid phase-out, the Mission was

TABLE V-1

SCHEMA OF U.S. ECONOMIC AID DECISION PROCESS

Executive Decision Agency	AID Government of China	AID	Agency for International Development	National Security Council, Bureau of the Budget, Iresident	
Investment Alternatives	<u>Sectors</u>	Philippines			
	Agriculture	Malaysia			
	Industry	Thailand			
	Infrastructure	Laos			
	Human Resources	Hong Kong	Europe		Domestic Defense (DOD)
	<u>Instrumental Structures</u>	Republic of China	Latin America		Information and Propaganda (USIS)
	Project vs. Non-Project	Japan	<u>Far East</u>		Foreign Military Assistance (MAP)
	Financial Terms	South Vietnam	Near East and South Asia		<u>Foreign Economic Assistance (AID)</u>
	Resource Inputs	Ryukyu Islands	Africa		Diplomacy (State Department)
		Western Samoa	Oceania		Unallocated (President's Fund)
	Unallocated (Regional)	Unallocated (Global)		U.S. National Security	
Hierarchy of Decision	(Sectors of the country economy: Instruments of Aid)	(Free China vs. other countries of its region)	(Far East vs. other regions of the world)	(Economic aid vs. other instruments of national security)	Target

reorganized during 1962 into a "consulting team" along functional lines, with three divisions of Capital Development, Management Resources, and Technical Resources.

5) Extensive use of contract services was an important element of the Mission Program up to 1962. Aid funds were used to finance a contract between the GRC and an American engineering firm, whereunder the latter made technical and economic studies of projects proposed by the GRC for U.S. assistance. The Mission relied upon these studies for decisions on the use of aid funds, because it lacked a staff capability of its own to make independent project appraisals. In mid-1962 this contract was terminated.

6) The total personnel of the Mission, Chinese and American, averaged around 350 during most of the aid period, including consultants and contractors. Total administrative costs, including contractors performing essential administrative services, averaged \$3 million a year, or about 3 per cent of aid obligations.

7) The central organs of aid administration within the GRC were the Council on U.S. Aid (CUSA) and the Sino-American Joint Commission on Rural Reconstruction (JCRR). CUSA was an inter-ministerial body, which cooperated with but was semi-independent of the ministries of the GRC and was the Chinese counterpart of the U.S. aid Mission. In 1963 its name was changed to Council on International Economic Cooperation and Development (CIECD), in reflection of broader functions and the new objective of U.S. aid phase-out. CIECD's functions included studies of investment projects, commodity import programs, long-range economic planning, foreign private investment, The Local Currency Program, and technical cooperation with other countries.

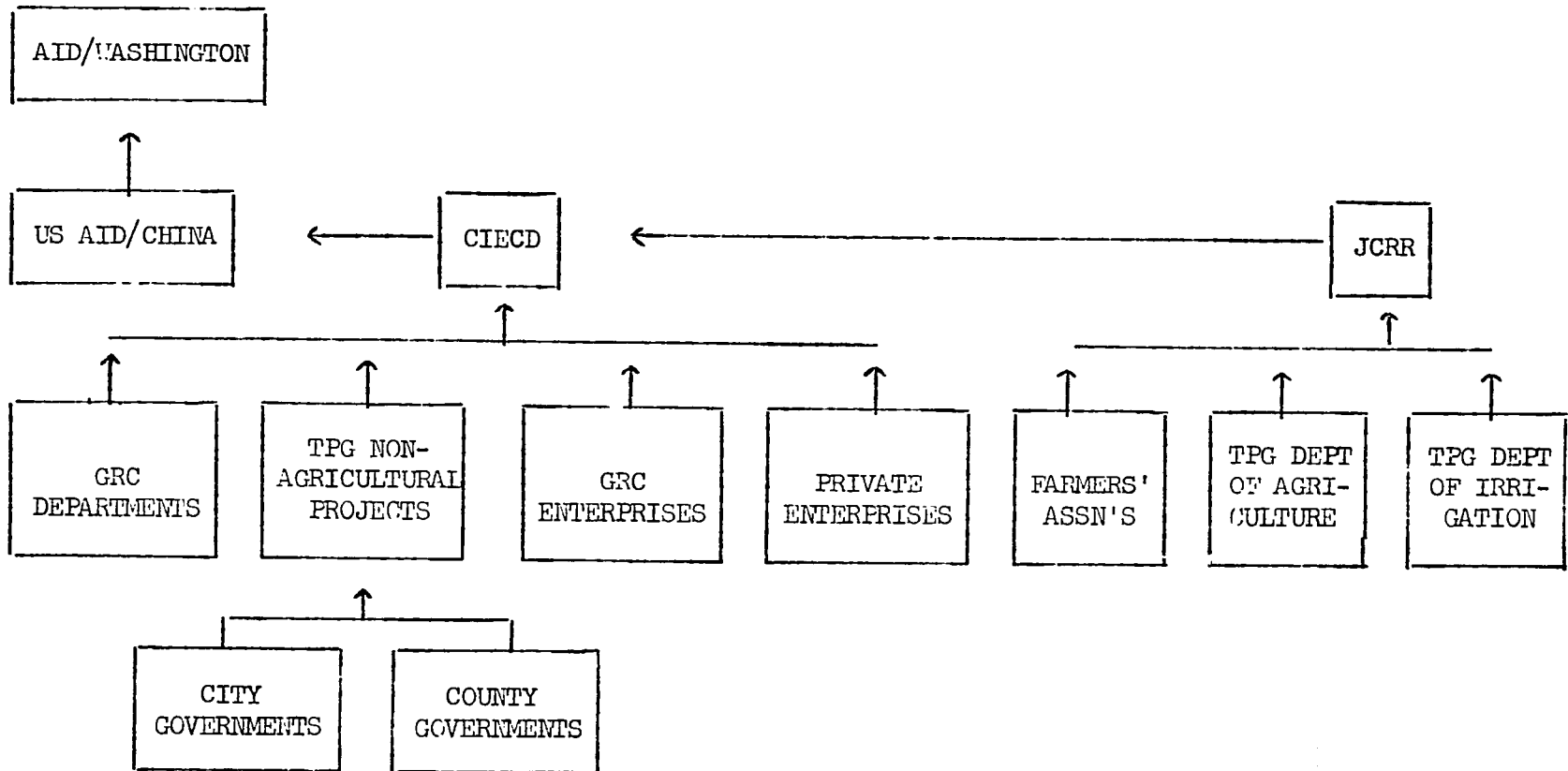
JCRR was a joint U.S.-GRC agency whose commissioners were appointed by the Presidents of the two countries. JCRR reviewed and coordinated aid programs in the rural sector. CIECD performed these functions in other sectors and submitted the total aid request of the GRC to the U.S. aid Mission. Being free to recruit and pay able staff members without the constraints of Chinese civil service, and being able to act without the delays inherent in direct responsibility to the Chinese legislative and executive organs, JCRR and CIECD were efficient institutions of aid administration.

8) The Economic Stabilization Board (ESB) was an important arm of the GRC during the initial years when stabilization was the prime aid objective. Established in 1951 as a ministerial-level agency to study, recommend and coordinate policies to bring about monetary and price stability, ESB had significant influences upon the amount and composition of U.S. assistance. It correlated aid deliveries with Chinese fiscal and monetary policies. American officials regularly participated in its meetings as advisers. ESB was dissolved in 1958 after the major aid objective shifted to development, and most of its functions were taken over by CUSA (CIECD).

9) The Taiwan Provincial Government (TPG) performed a vital subsidiary role in U.S. aid administration. It had the responsibilities of carrying out the policies of the national government of China in Taiwan, coordinating developmental plans and projects of the local governments, and presenting all projects for review by JCRR and CIECD. During the latter years of the aid period, the TPG played an increasingly important role in aid administration.

CHART V - 2

FLOW CHART OF AID PROJECTS AND PROGRAMS THROUGH THE CHINESE GOVERNMENT



10) Other effective developmental institutions were established in Free China with U.S. assistance. These included the China Productivity and Trade Center (CPTC) formed in 1956, the China Development Corporation formed in 1958, and the Industrial Development and Investment Center, organized in 1959. They provided counsel, technology, and capital to enterprises and investors throughout the country.

11) Chinese institutions of aid administration were characterized by a high degree of autonomy, effective cooperation with the U.S. aid Mission, and an unusual continuity of life. These qualities had a very significant bearing upon the favorable results achieved with aid. The only organizational shifts made in these bodies during the aid period reflected basic changes in aid objectives from stabilization, to development, to private sector stimulation and phase-out.

12) The problem of integrating future development responsibilities and budgets into the regular ministries of the GRC remained when U.S. aid ended. An initial step toward this end was taken during 1965 with the appointment of a new Minister of Economic Affairs who served concurrently as Vice-Chairman of CIECD. The prospect was that the integration would be effected satisfactorily over a five-year transition period 1965-1969, at the end of which CIECD and JCRR could be dissolved as separate entities.

13) The actual process and rationale of determining the annual level and composition of aid to Taiwan gave considerable initiative to CIECD. The Mission had the responsibility to initiate a proposed aid program for each ensuing fiscal year, for review, adjustment and approval in Washington. The program reflected an assessment of the annual economic requirements of Free

China over the next two years necessary to meet U.S. security objectives, given the amount of undelivered aid "in the pipeline" (and probable appropriations by Congress). In practice, CIECD initiated many proposals for aid, which were subsequently discussed with and adjusted by the Mission. These proposals did not constitute an integrated "program". Proposed non-project imports were based upon the estimated deficit in Taiwan's balance of payments, which included developmental elements, and proposed project aid generally was added on independently. The overt justification for the total amount of next year's request was last year's appropriation rather than an assessment of long-term requirements. The focal points of discussion were the "justifiable" size of the balance of payments "gap" to be financed primarily by Defense Support, and the marginal changes in the amount of last year's aid. The balance of payments "gap" thus tended to become "institutionalized," with the Mission validating a "gap" in resources which it then cited as "justification" for aid.

PART C

TAIWAN'S DEVELOPMENT

Chapter VI. Foundations of Taiwan's Development before 1951

1) The nature, extent, and time dimensions of Taiwan's development prior to 1951 must be understood in order to evaluate the results of U.S. aid. The developmental response of a country to an input of external resources of specified kind and amount differs at different stages in its evolution from a traditional to an advanced society, being slow at first and more rapid later on. The probable growth of GNP per dollar of aid depends on the state of development of a recipient country. Only the development/aid relationships of economies at about the same stage of evolution may be compared meaningfully.

2) Taiwan was a "traditional society" with static socio-economic processes when it was taken over by Japan in 1895. Japan made Taiwan the subject of a vigorous developmental policy aimed at transforming it into a productive agricultural component of its empire.

3) At the inception of U.S. aid in 1951 Taiwan's economy was the product of a developmental process that had already taken 43 years. Although 56 years had elapsed from the commencement of its development in 1895, World War II and postwar recovery created an hiatus of about 13 years in the island's progress. Thus Taiwan possessed a partly-developed rather than an undeveloped economy in 1951. The subsequent fifteen-year period of U.S. aid was only the most recent one-fourth of a much longer economic evolution.

4) Japan's developmental strategy for Taiwan was well conceived and executed in the colonial tradition. It emphasized, in chronological order, (a) establishment of civil order and monetary stability, (b) land

registration and reform that eliminated feudal rent receivers and gave clear title and strong incentives to landowners and tenants, (c) governmental investments in infrastructure--hydro-electric power, transportation and communications facilities, (d) improvements in agricultural technology, and (e) human resource development through education, agricultural experiment stations, farmers' associations and credit unions. In the belief that Taiwan's comparative advantage lay in agriculture, and this would complement Japan's industrial economy, large outlays were made on irrigation and other projects to raise agricultural productivity.

5) Japanese government aid to Taiwan ceased in 1910 after fifteen years of subsidies. Development was thereafter financed by resources generated internally by taxation and the government monopolies, and by Japanese private enterprise investment in the sugar, pineapple, jute and other agricultural processing industries. Iron and steel, paper, aluminum and several other industries were also established during the Thirties.

6) Taiwan's economy grew slowly during the first twenty years of Japanese rule after which growth accelerated. GNP probably rose at an annual average rate of 2-3 per cent during 1895-1915, although reliable figures are lacking. In this period institutions were being established, infrastructure and social capital was being formed, and literacy and technology was being improved--investments with high capital/output ratios. The JCRR estimated that the real national product grew by 2.6 per cent per year during 1916-1920, 3.7 per cent during 1921-1925, a remarkable 8.0 per cent during 1926-1930, 5.2 per cent during 1931-1935, and fell off to 2.6 per cent during 1936-1940. During the prewar quarter century under Japan, Taiwan's economic growth probably averaged about 4.0 per cent a year.

TABLE VI - 1

Estimated Real Net National Output of Taiwan by Industrial Origin,
for Quinquennial Period, 1911-1940

(Values expressed in thousands of Taiwan dollars - 1935 - 1937)

<u>Period</u>	<u>Total</u>		<u>Primary industry</u>		<u>Secondary industry</u>		<u>Tertiary industry</u>	
	<u>Amount</u> <u>\$</u>	<u>Growth</u> <u>rate-%</u>	<u>Amount</u> <u>\$</u>	<u>Growth</u> <u>rate-%</u>	<u>Amount</u> <u>\$</u>	<u>Growth</u> <u>rate-%</u>	<u>Amount</u> <u>\$</u>	<u>Growth</u> <u>rate-%</u>
1911-1915	293,660	-	140,598	-	78,219	-	74,841	-
1916-1920	336,547	2.92	123,086	-2.51	126,953	12.46	86,508	3.12
1921-1925	399,143	3.72	159,353	5.89	109,521	-2.76	130,266	10.12
1926-1930	560,175	8.07	218,002	7.36	149,258	7.26	192,915	9.62
1931-1935	706,218	5.21	248,623	2.81	209,302	8.05	248,293	5.74
1936-1940	796,749	2.56	280,371	2.55	269,784	5.78	246,594	-0.14

Source: Estimates by Rural Economics Division, JCRR.

Published in S.C. Hsieh and T. H. Lee, "Agricultural Development and its Contribution to Economic Growth in Taiwan" (Taipei: JCRR, February 1965. Mimeo) Values are of physical outputs of major commodities at average 1935-1937 prices in old Taiwan dollars, which had a 1/1 official exchange ratio with the Japanese yen. "Primary industry" included agricultural products involving little or no processing. "Secondary industry" included products such as sugar and pineapple which required processing. "Tertiary industry" included all others.

The value of output was about T\$260 millions in 1911 and about T\$840 millions in 1940. Output in 1940 was 3.24 times its value thirty years earlier, which implies a compound growth of 4.0 per cent a year.

7) Japan dominated Taiwan's external economic relations. Japan took 84 per cent of Taiwan's exports (primarily agricultural) and supplied 74 per cent of its imports (mainly manufactures) during 1911-1940. Taiwan's foreign trade expanded enormously after 1910, exports maintaining an average annual growth of 9.0 per cent and imports of 10.3 per cent. The gross return of Taiwan to Japan can be measured roughly by Taiwan's net export surplus to Japan, which averaged 12.4 per cent of its domestic product and 24 per cent of its total exports.

8) The people of Taiwan benefitted from a substantial rise in real net income per capita under Japanese rule. Although data are lacking to measure the improvements accurately, there is no doubt that the quality of life was bettered.

9) Most Taiwan industries reached prewar peak levels of output in 1938 or 1939. After these years, drafts on manpower for military service and the country's increasing involvement in World War II brought sharp declines. Japan's war plans to make Taiwan the major base of its southward expansion and a center of its "East Asia Co-prosperity Sphere" were thwarted by military defeat. Typhoons, floods, lack of maintenance and allied bombing made heavy inroads on the island's capital stock. Physical production rates plummeted to a nadir in 1945, when they were about half their peak levels in 1938 or 1939.

10) Postwar reconstruction and recovery was slow following the transfer of Taiwan to Nationalist China in 1945. The reasons were GRC preoccupation with the war against the Communists on mainland China, use of Taiwan's resources in that conflict, loss of Japanese and mainland Chinese

TABLE VI - 2

External Trade of Taiwan with Japan and With Other Countries,
Quinquennial Intervals of the Period 1911 - 1940
 (Values in Millions of Taiwan Yen)

<u>Year</u>	<u>Exports</u>			<u>Imports</u>			<u>Export Surplus</u>		
	<u>To Japan</u>	<u>To Other</u>	<u>Total</u>	<u>From Japan</u>	<u>From Other</u>	<u>Total</u>	<u>To Japan</u>	<u>To Other</u>	<u>Total</u>
1911	Y 51.6	Y 13.2	Y 64.8	Y 33.7	Y 19.6	Y 53.3	Y 17.9	Y -6.4	Y 11.5
1915	60.2	15.4	75.6	40.6	12.8	53.4	19.6	2.6	22.2
1920	181.1	35.2	216.3	112.1	60.4	172.4	69.0	-25.2	43.8
1925	215.2	48.0	263.2	129.9	56.5	186.4	85.3	-8.5	76.8
1930	218.6	22.8	241.4	123.1	45.1	168.2	95.5	-22.3	73.2
1935	314.2	36.5	350.7	218.1	45.0	263.1	96.1	-8.4	87.6
1940	459.3	106.8	566.0	425.8	56.1	481.8	33.5	50.7	83.2
<u>(Percentages of Total Trade)</u>									
1911	79.6	19.4	100.0	63.2	36.8	100.0			
1915	79.6	19.4	100.0	76.0	24.0	100.0			
1920	83.7	16.3	100.0	65.0	35.0	100.0			
1925	81.8	18.2	100.0	69.7	30.3	100.0			
1930	90.6	9.4	100.0	73.2	26.8	100.0			
1935	89.6	10.4	100.0	82.9	17.1	100.0			
1940	81.1	18.9	100.0	88.4	11.6	100.0			

markets, the disorganization caused by the replacement of Japanese with mainland Chinese leadership, and the incompetence and corruption of the initial GRC military government. About 30,000 Japanese technicians, professionals and administrators left Taiwan during 1945.

11) Immigration of mainland Chinese technical, professional and administrative personnel into Taiwan during the reconstruction period far more than replaced the departed Japanese. It formed an input of human resources of major significance to the island's future development. By 1951 more than 600,000 civilian mainlanders resided in Taiwan, an increment of human talent in a relatively small country without parallel.

12) Reconstruction of Taiwan's economy began in earnest during 1949 with land reform. Chen Cheng was appointed civilian governor of the island by the GRC in that year. His first major economic policy was to initiate land reform. Carried out in three stages during 1949-1953, land reform had two major effects: it greatly enhanced incentives to agricultural capital formation and production by reducing rents and increasing tiller ownership of land; and it created new industrial entrepreneurs and investment funds for industrialization by compensating former landowners with rice bonds and stocks in the publicly-owned industrial enterprises.

13) By 1951 or 1952 postwar reconstruction was complete. Prewar peak outputs in most branches of agriculture and industry had been recovered. However, prewar peak levels of per capita output and income were not recovered until about 1956, owing to the rapid increase of population in the interim by native birth and immigration. Taiwanese efforts to recover their previous level of living held down the savings/income ratio and limited domestic capital formation until after this objective had been reached.

TABLE VI-3

Relation of Taiwan's Net Exports to Japan to its Net Domestic ProductQuinquennial Intervals of the Period 1911-1940

(Values in Millions of Current NT Dollars)

<u>Year</u>	<u>Net Exports to Japan</u>	<u>Net Domestic Product</u>	<u>Per cent of Net Exports to Net Domestic Product</u>
1911	NT\$ 17.9	NT\$ 167.1	10.7
1915	19.6	181.6	10.8
1920	69.0	495.9	13.9
1925	85.3	573.3	14.9
1930	95.5	567.7	16.8
1935	96.1	766.3	12.5
1940	33.5	1,287.8	2.6
Arithmetic mean of annual figures			12.4

Source: Basic figures on exports and net domestic product
by JCRR.

14) The legacy of the Japanese colonial period was a strategic determinant of the rapid pace of Taiwan's development after 1951. The most important part of this legacy consisted of human attitudes, skills and institutions favorable to development. The balance was physical capital in infrastructure, mills, mines, factories and irrigated fields. Much progress had been made in transforming Taiwan from a subsistence to a market economy. A central governmental administration working through local institutions had been created.

15) A relatively rapid growth of Taiwan's economy was to be expected after large scale U.S. aid began in 1951. Some of the foundations of further development had been laid by Japan, including (a) a well-trained, disciplined, adaptable and economically-motivated population, (b) an efficient agriculture practiced by farmers receptive to further improvements, and (c) basic infrastructure and social capital. Nationalist China supplied a literate and experienced administrative leadership, stable government and constructive economic policies. The final element required to make the economy grow was a large supply of goods and technology that would enable Free China to carry an extraordinary military burden, and to counter a price inflation that threatened to get out of control. This last catalytic factor was supplied at the critical time by American aid.

Chapter VII. Economic Development of Taiwan During 1951-1965

1) During 1951-1965, Taiwan's economy maintained a higher growth rate than any other in Asia except that of Japan. The average annual compound rate of increase in real GNP was 7.6 per cent according to official figures. (Use of other price deflation methods gives a somewhat lower figure.) This growth was exceptionally steady and its pace did not slacken. It was highest during 1952 at 12.3 per cent. Even in the worst year of 1956--marked by severe typhoon damage--it was 4.0 per cent. In constant 1964 dollars, GNP rose from \$879 million in 1951 to an estimated \$2.4 billion in 1965, an increase of 173 per cent.

2) The population of Taiwan increased at the rapid average compound rate of 3.3 per cent a year--among the highest rates in the world. Local births plus immigration raised the island's population from 8.4 million in 1951 to 12.6 million in 1964. Although the pace of population growth slowly fell during 1954-1965, Taiwan had in 1965 a highly youthful population, making for large future additions to its work force.

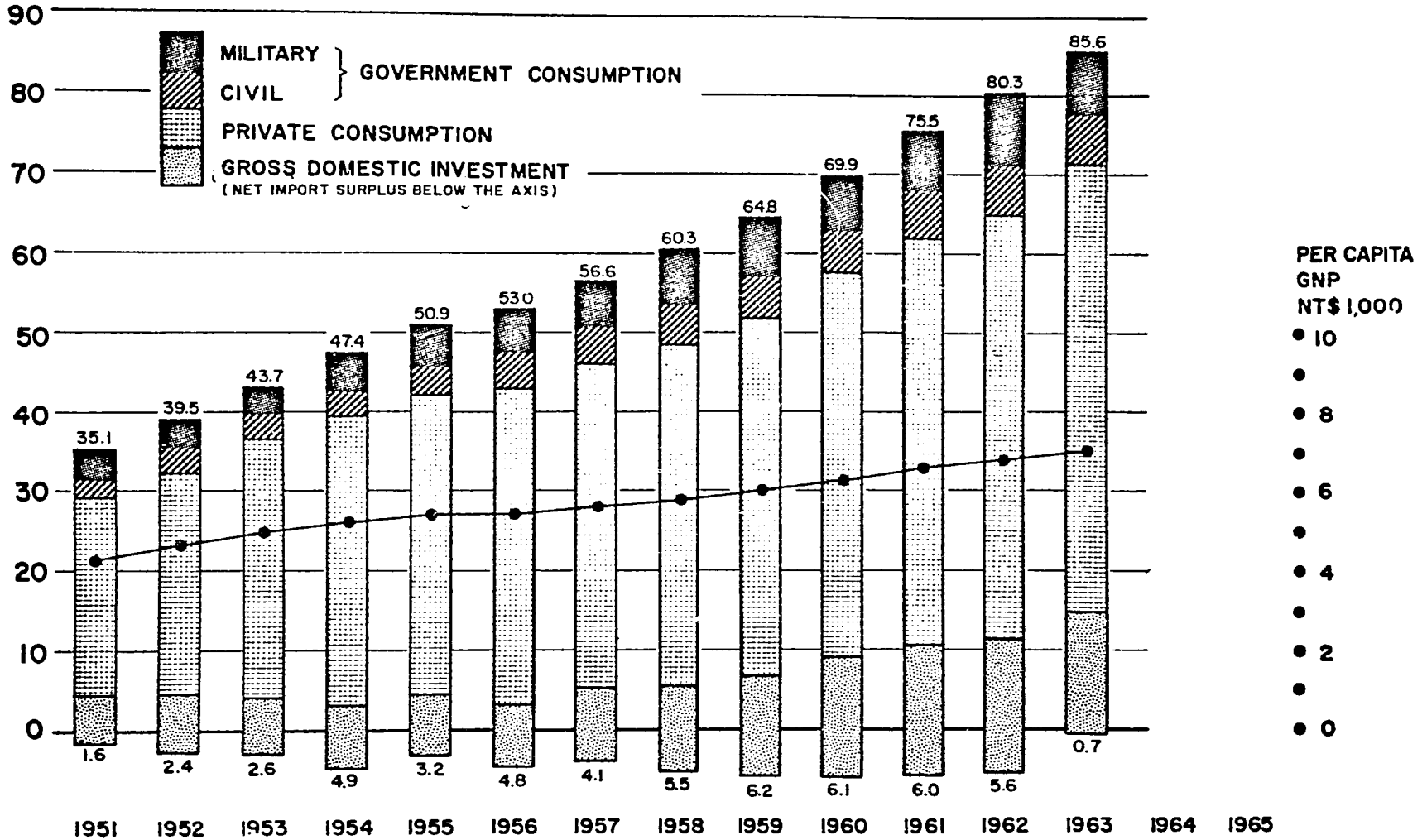
3) Taiwan's per capita GNP grew at the astonishing annual compound rate of 4.2 per cent and exceeded that of any other Asian country except Japan. By 1965 it was about \$187, bringing the country to a level of living characteristic of a semi-advanced economy.

4) There was a sharp structural shift from agriculture to industry during the aid period. After allowing for relative price changes, the agricultural percentage of GNP fell from 32 to 24, while that of industry rose from 28 to 49. Physical output of agriculture increased 82 per cent during 1951-1963, but that of industry rose 324 per cent. The average

VII-1

GROSS NATIONAL PRODUCT AND ITS USES, 1951-1965

CONSTANT 1964
NT\$ BILLIONS



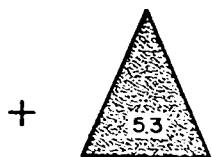
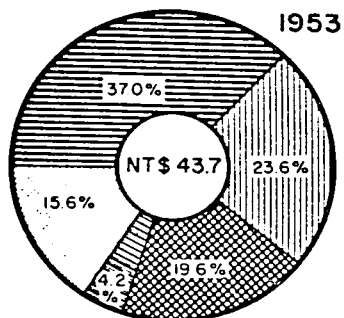
VII-1

REPUBLIC OF CHINA

NATIONAL ACCOUNTS ESTIMATE FOR 1953 AND 1963

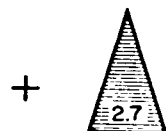
(BILLIONS OF CONSTANT 1964 NT DOLLARS)

**GROSS NATIONAL PRODUCT
BY INDUSTRIAL ORIGIN
(VALUE ADDED MARKET PRICES)**



U. S. MILITARY AID

12.1%



FOREIGN ECONOMIC ASSISTANCE

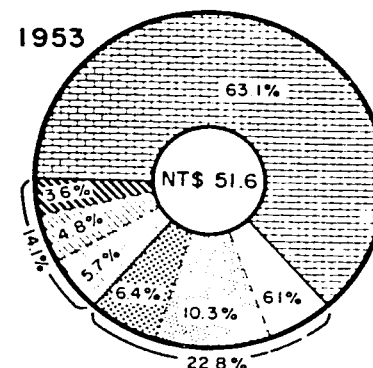
6.2%

- 0.08

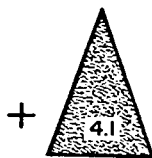
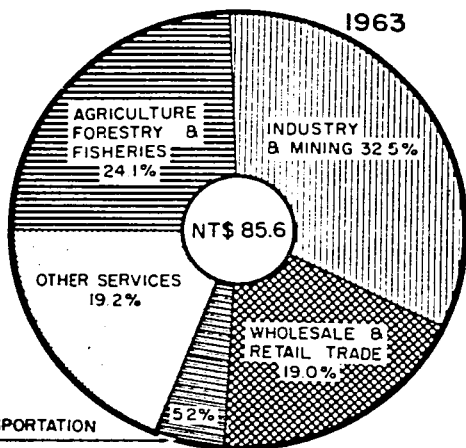
INCREASE IN FOREIGN EXCHANGE RESERVES

0.2%

DISTRIBUTION OF TOTAL AVAILABLE RESOURCES



% GNP



4.9%



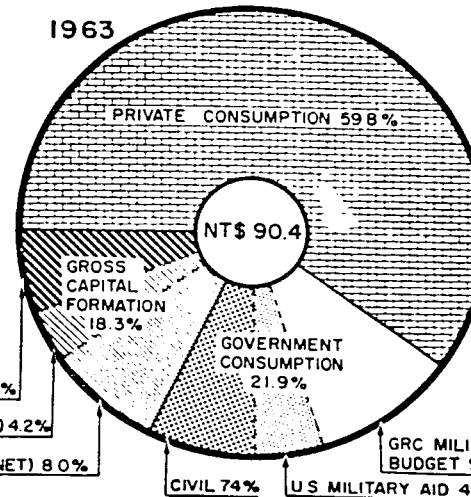
4.1%



3.3%

% GNP

1963



GOV'T & GOV'T ENTERPRISE (NET) 4.2%

PRIVATE (NET) 8.0%

CIVIL 74%

US MILITARY AID 4.2%

GRC MILITARY BUDGET 9.9%

annual compound rate of increase in real agricultural output was 5 per cent, in industrial output 13 per cent.

5) There was also a structural shift from the public to the private sector. Nearly all of Taiwan's primary agricultural output came from private farm enterprises through the aid period. Of total industrial production, that of private enterprise rose from 45 to 62 per cent during 1951-1963, and that of government and public enterprises fell from 55 to 38 per cent. Although public enterprises continued to play an important role in Taiwan in 1965, the rate of growth of output of the private sector was about twice as fast.

6) An enormous increase in the private enterprise population of Taiwan testified to the vigorous growth of the private sector. During 1951-1964 the number of profit-seeking firms outside of agriculture rose threefold from 68,000 to 227,000, and the number of business corporations rose elevenfold from 1,000 to 11,000. In agriculture, the number of farms wholly or partly-owned by their operators increased from 59 per cent to 87 per cent of the 800,000 total. These increases far outstripped the 50 per cent rise in population.

7) Total consumption expenditures rose from 88 per cent to 94 per cent of GNP during 1951-1956, then declined steadily to 82 per cent in 1963. This reflected mainly shifts in private rather than governmental behavior, notably the efforts of consumers to regain prewar levels of per capita consumption. This goal was attained in 1956, after which there was a rising propensity to save. The heavy influx of U.S. aid hastened the attainment of this goal.

TABLE VII-1

Indicators of Economic Progress of Taiwan - 1951-1964

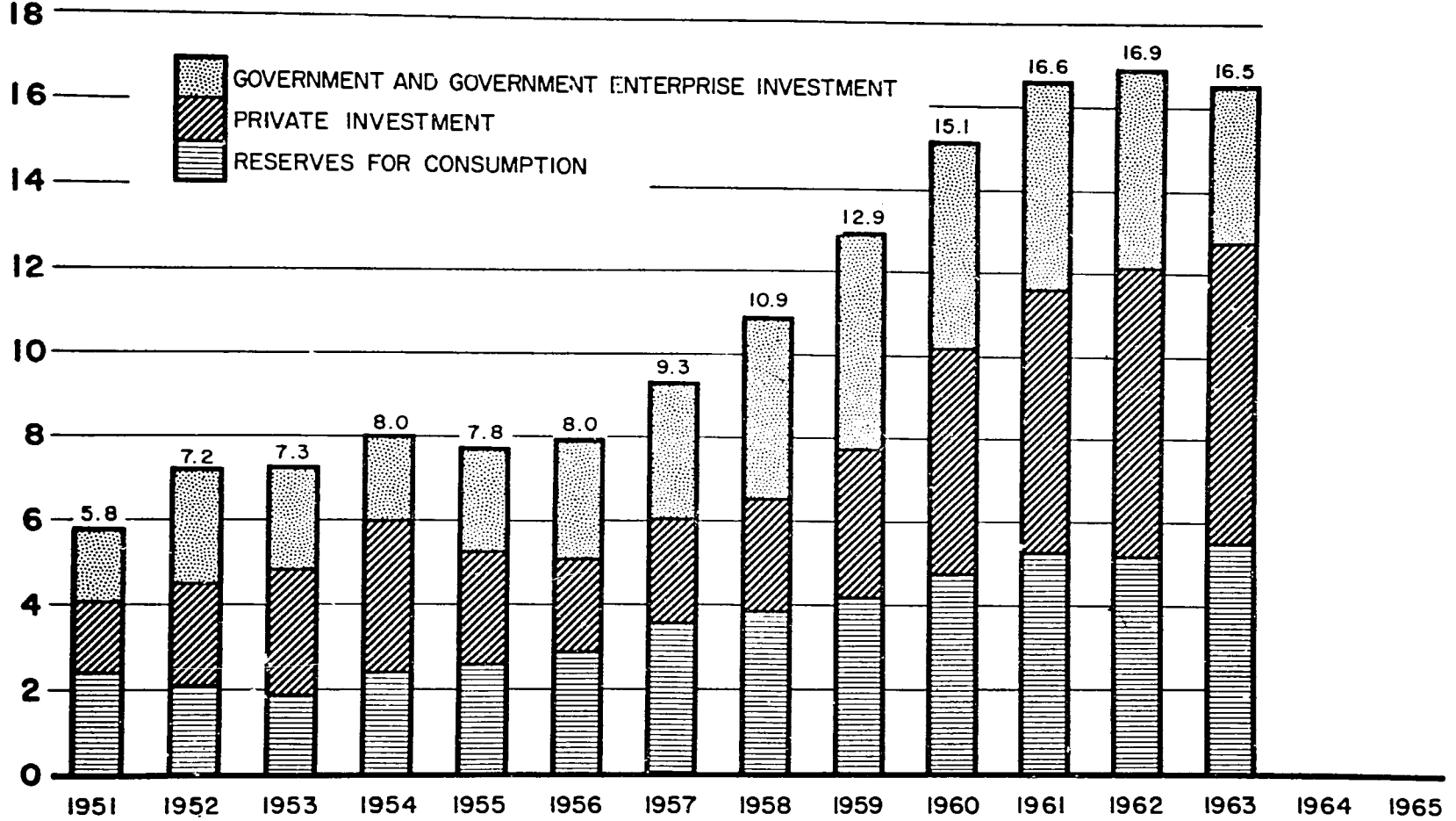
(In US\$ Million, Except Where Stated Otherwise)

	<u>1951</u>	<u>1953</u>	<u>1955</u>	<u>1957</u>	<u>1959</u>	<u>1961</u>	<u>1963</u>	<u>1964</u>
1) GNP in constant 1964 prices	879	1,093	1,273	1,416	1,621	1,887	2,140	2,357
2) GNP in constant 1964 prices per capita	106	124	134	140	150	164	175	187
3) Gross fixed investment in constant 1964 prices	106	131	159	188	282	334	351	372
4) GFI as per cent of GNP	12.1	12.0	12.5	13.3	17.4	17.7	16.4	15.8
5) Agricultural production index (1951=100)	100.0	121.7	126.0	147.7	159.9	175.4	181.8	200.5
6) Industrial production index (1951=100)	100.0	156.7	186.7	222.9	271.3	341.3	423.9	533.3
7) Gross Domestic Saving in constant 1964 prices	105	116	116	131	169	265	396	489
8) Gov't current revenue (Net) in constant 1964 prices	153	174	235	284	316	328	396	414
9) Exports as per cent of GNP in constant 1964 prices	9.8	8.3	9.2	10.0	11.0	12.0	16.8	20.4
10) Imports as per cent of GNP in constant 1964 prices	14.4	14.3	15.4	17.2	20.1	19.9	17.5	20.2

Source: Appendix C

GROSS DOMESTIC INVESTMENT 1951-1965

CONSTANT 1964
NT\$ BILLIONS



8) Gross capital formation--the mainspring of economic growth-- increased from around 12 per cent of GNP to around 17 per cent. Private capital formation was a rising fraction of the total. Annual gross fixed investment in constant dollars maintained a compound rate of increase of 11 per cent during 1951-63, more than tripling from \$106 million at the beginning to \$350 million at the end of the period.

9) The major gains in industrial production were made in processed foods, minerals, chemicals, electric power, and coal. The fastest industrial growth rates were registered by metals, rubber products, paper and wood products, electrical equipment, and transportation equipment.

10) The major gains in agricultural production came in forestry, fisheries, special and horticultural crops, such as bananas and mushrooms. Staple crops like rice, sweet potato and livestock showed lesser relative increases.

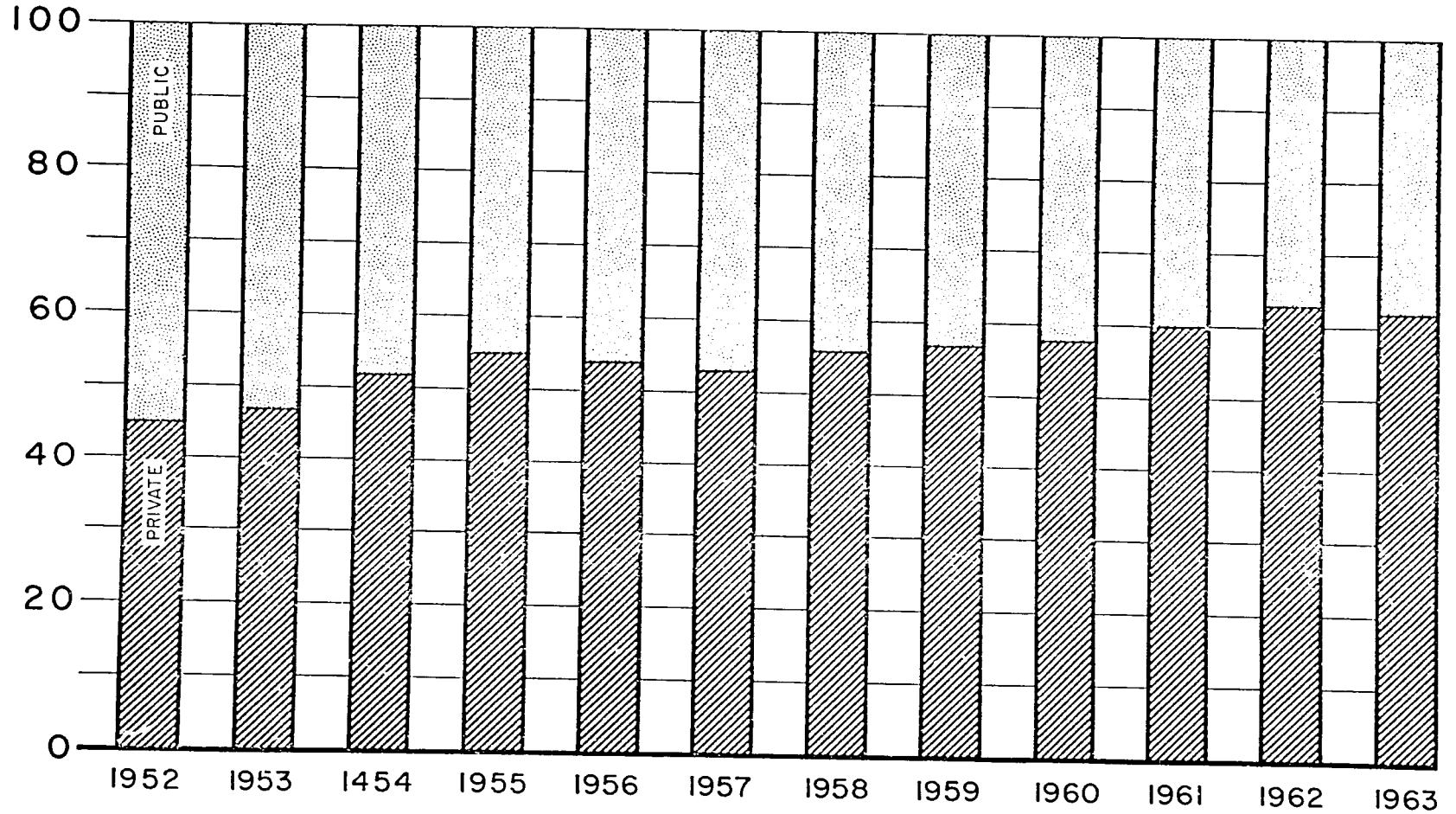
11) The electrical generating industry expanded with exceptional rapidity. Electrical generating capacity tripled and consumption quadrupled over the aid period, and the number of electrical consumers (outlets) rose from 500,000 in 1951 to 1,400,000 in 1963. A rural electrification program, begun in 1954, had brought service to the preponderance of all households. Nevertheless, there were large unsatisfied demands for electricity during most of the aid period.

12) Taiwan suffered from unemployment during 1951-1963, notwithstanding the astonishing rise in production. The unemployed apparently formed 8-10 per cent of the work force in 1963, but official statistics counted children 12 years old and over as members of the labor force.

VII-4

INDUSTRIAL PRODUCTION IN PRIVATE AND PUBLIC SECTORS, 1952-63

PER CENT



VII-4

Few households lacked at least one employed member. Unemployment undoubtedly existed, and helped to hold down costs and to strengthen the country's competitive strength in international markets.

13) Government expenditures at all levels rose more than proportionately to the GNP during the aid period. They rose from 22 per cent to 25 per cent of GNP during 1951-63. National government outlays grew faster than those of the provincial and local governments. Military expenditures consistently formed 85 to 90 per cent of central government expenditures, reflecting the onerous costs of maintaining a 600,000 man military force.

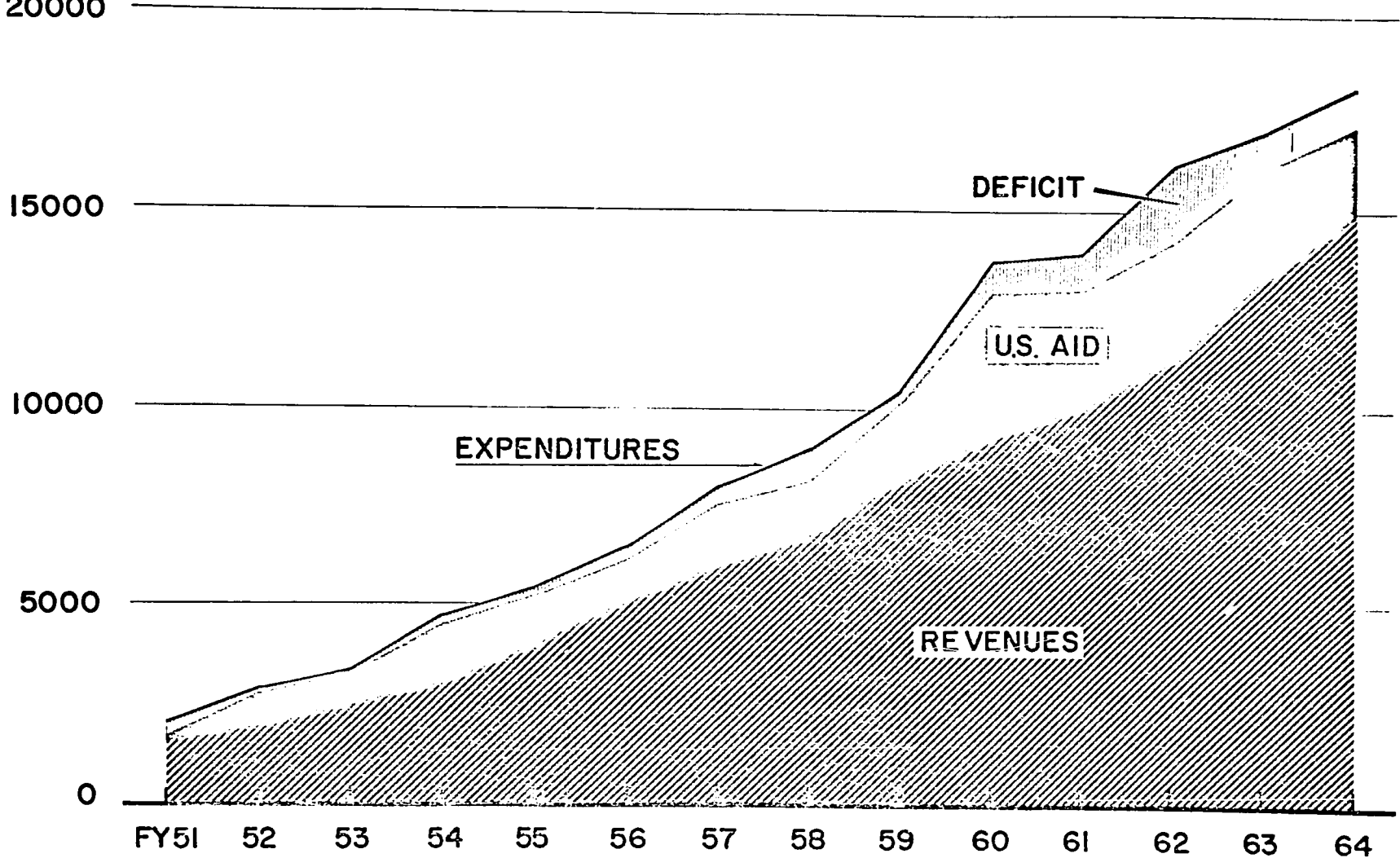
14) Government revenues at all levels also rose more than proportionately to the GNP. They were 13 per cent of GNP in 1951 and 22 per cent in 1963. There were moderate reforms, but no important structural changes, in the revenue system during the aid period.

15) The government deficit averaged 26 per cent of total expenditures. The deficit was covered primarily by allocations of local currency generated by U.S. aid, and by borrowing from the central bank which, of course, expanded the money supply.

16) Taiwan's money supply--cash plus demand deposits--increased at an astonishing annual compound rate of 26 per cent during 1951-1964. Money supply multiplied fourteen times over the fourteen years, at a fairly steady rate. Much of the additional money was used in monetizing more of the economy. During recent years, the cash balances of the public were built up. Some of the increase was expressed in an inflation of the price level, especially in the earlier years of U.S. aid. The great expansion of

CONSOLIDATED GOVERNMENT REVENUES & EXPENDITURES, 1951-1964

NT\$ MILLIONS
20000



publicly-held bank deposits during 1963-65 indicated that inflationary expectations had abated, and people held more confidence in the future value of money.

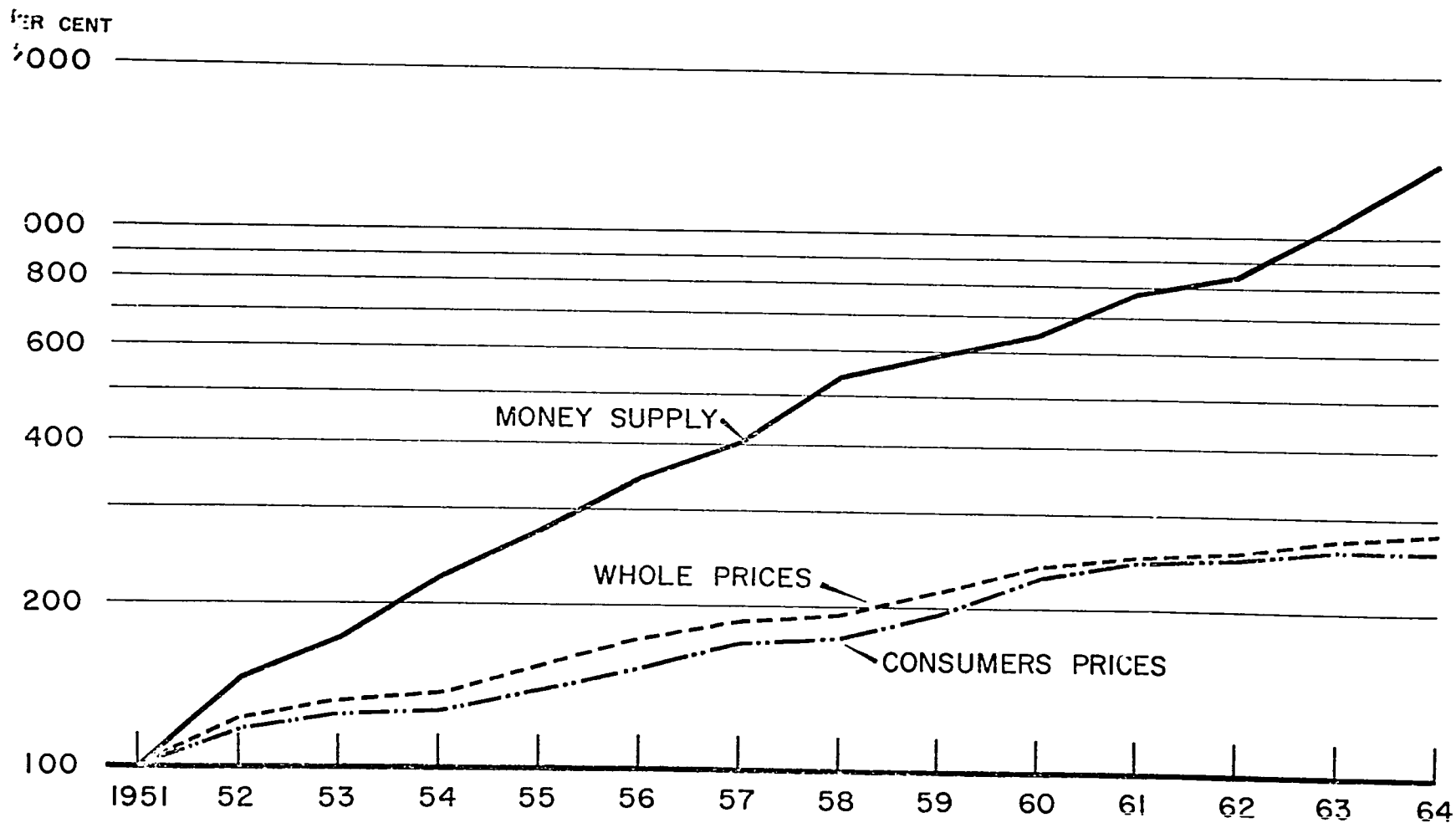
17) The wholesale price index rose at an average compound rate of 8.5 per cent a year during 1951-64, giving an overall increase of 181 per cent. However, most of the lift occurred in the earlier years. After 1961 increases were only 3 to 5 per cent a year.

18) The consumers price index had an average compound increase of 7.8 per cent a year during 1951-64, going up 160 per cent. Again, the rise was concentrated in the years before 1961, subsequent annual increases were 3 to 5 per cent. Although price inflation had not been stopped, it had been brought within tolerable bounds.

19) Interest rates fell rapidly during the aid period. Rates dropped from levels of 36 - 48 per cent a year on short-term commercial loans in 1951 to about 12 per cent in 1965. Interest rates paid depositors for funds had commensurate reductions. This reflected primarily an abatement of inflationary expectations and more abundant savings, and some improvements in the organization of financial markets. Nevertheless, Taiwan in 1965 was still a capital-deficit country offering a relatively high rate of return to investment.

20) Taiwan's balance of foreign trade and payments registered dramatic improvement after 1956. During the early years of the aid period, exports averaged about \$110 million a year and were less than 10 per cent of the GNP, while annual imports ran more than double this amount, despite tight GRC controls. The import surplus thus averaged \$107 million annually,

RISE IN MONEY SUPPLY AND PRICES, 1951-1964



more than 90 per cent of which was covered by U.S. aid, with the balance being offset by foreign private investment. After 1956 exports rose gradually, and the rise accelerated through 1964 when over \$400 million were exported and an export surplus of \$50 million was realized. Higher sugar prices were partly responsible, but burgeoning industrial exports was the primary cause. Three-quarters of Taiwan's trade was with neighboring Asian countries, led by Japan, and with North and South American countries, led by the U.S.

21) Foreign private investment arrivals expanded after 1958, when Free China's defensive strength was demonstrated in the Formosa Strait. The rising inflow of foreign private capital during 1959-1965--primarily from U.S., Japanese, and overseas Chinese sources--promised to continue, as a result of the GRC's economic policies of creating a favorable investment climate and establishing tax-and-duty-free industrial processing zones on the island.

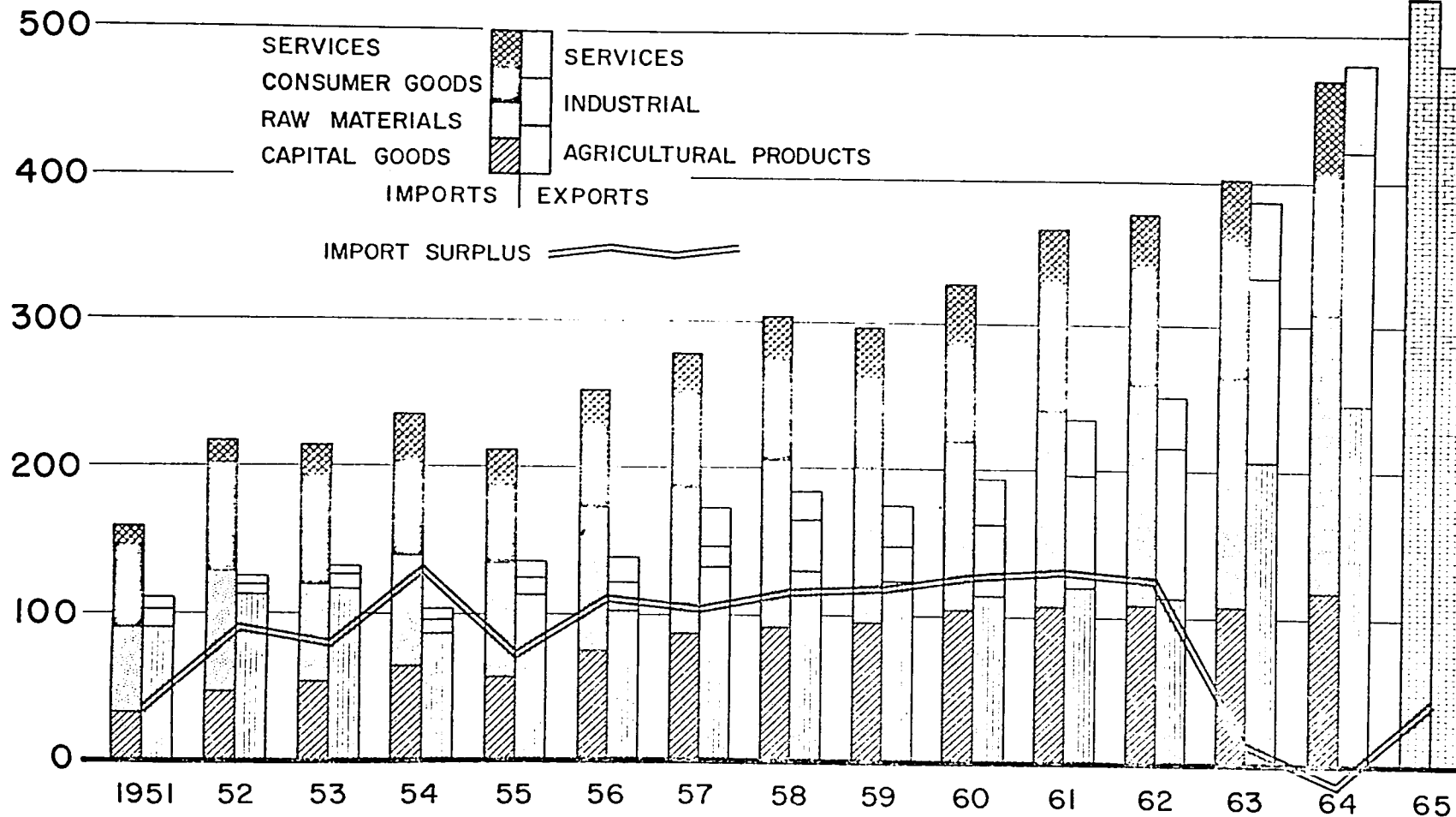
22) Free China's foreign exchange reserves were at minimum operating levels until 1962, after which they rose rapidly to around \$300 millions by mid-1965. The latter figure was equivalent to more than one year's non-aid imports. Although they had been progressively liberalized in 1958, 1961 and 1964, government controls of foreign trade and payments continued in effect. The prospect was for further liberalization, if the favorable balance of payments continued.

23) Free China established its creditworthiness at the World Bank during 1962. A World Bank mission reported favorably upon Taiwan's economic progress, and found that it was qualified for developmental assistance on a commercial basis. This was another step toward economic independence.

GROSS IMPORTS & EXPORTS OF TAIWAN, 1951-1965

(INCLUDING SERVICES BUT EXCLUDING TRANSFER PAYMENTS AND MILITARY ASSISTANCE)

MILLIONS OF US DOLLARS



24) New economic and financial institutions were established during the aid period and existing institutions were improved. New institutions included a stock exchange, an industrial development bank, branches of two large American commercial banks, the IDIC, the CPTC, and tens of thousands of additional private manufacturing and trading enterprises. Notable improvements were made in the tax laws affecting investors, exchange rates were unified and stabilized at the rate of NT\$40 per \$1.00, banking laws and practices began to improve. Nevertheless, in 1965 Taiwan still confronted the need for modernizing its instruments of central banking, developing an apparatus of investment banking, popularizing equity ownership, establishing a consumer credit industry, and evolving an independent public accounting profession.

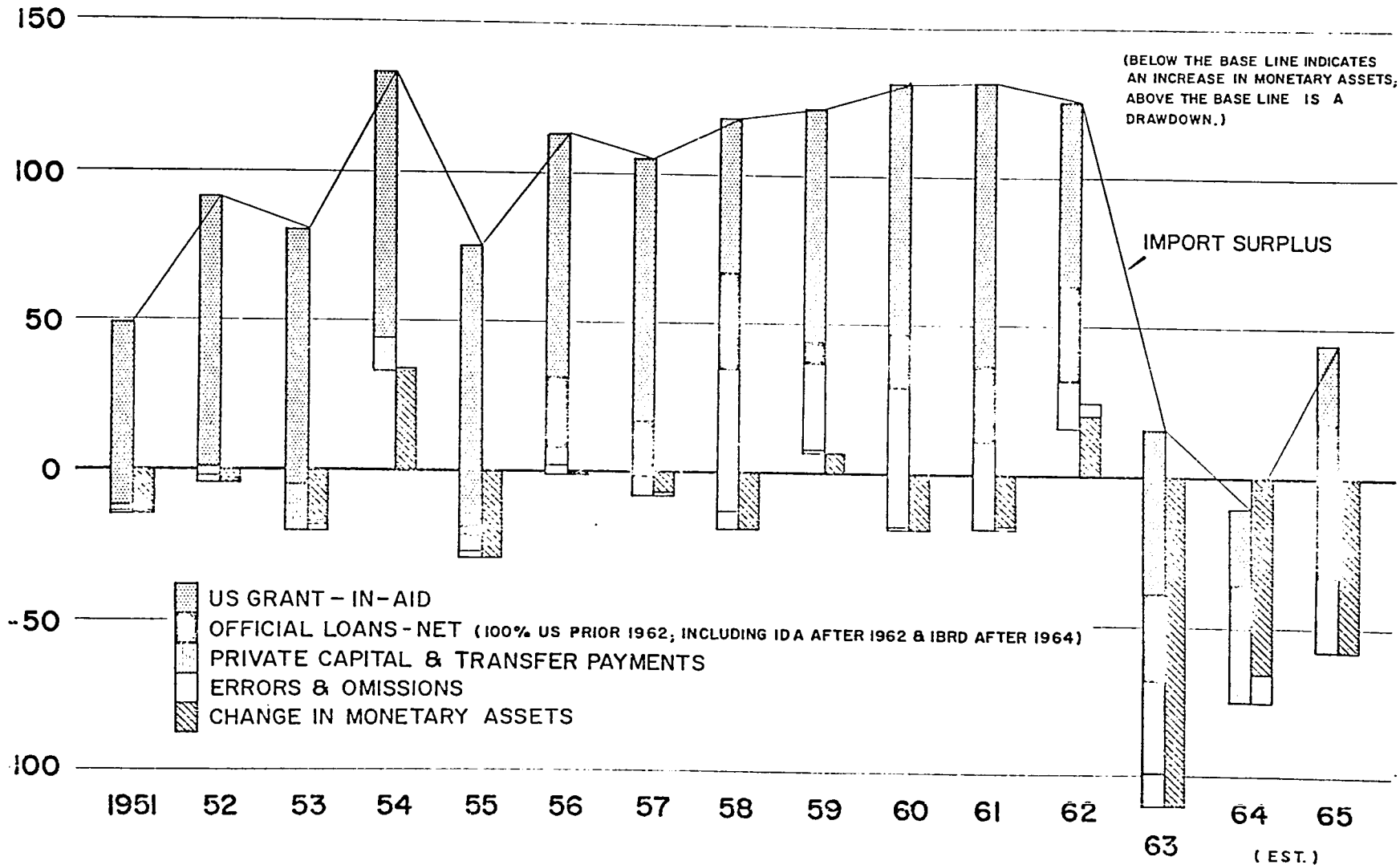
25) The real national wealth of Taiwan increased at the remarkable average compound rate of 11 per cent a year. Total fixed capital stocks, excluding private dwellings and government office buildings, quadrupled between 1951 and 1964 in constant prices, and reached a value of about \$6.6 billions in the latter year. Housing appears to have lagged as a component of fixed capital stock.

26) The forces of economic growth were widely diffused throughout the economy. Output and productivity rose steadily in most branches of agriculture and industry, albeit at different rates. Growth was general, and no "strategic growing points" or "development blocks" could be identified which served as nuclei from which the growth process spread. The relatively small area of Taiwan facilitated general growth.

FINANCING OF TAIWAN NET IMPORT SURPLUS, 1951-1965

(EXCLUDING U.S. MILITARY ASSISTANCE)

US \$ MILLIONS



27) The fruits of economic progress were widely spread among the people of Taiwan. Inequality of income distribution probably increased somewhat during the aid period; but data to measure it are lacking. It is not possible to say whether the distribution of income moved closer to the optimum for the promotion of growth. All

economic groups--farmers and urban dwellers alike--benefitted from higher levels of living, although real incomes of civil service and military personnel lagged the procession. Taiwan did not exhibit evidence of the economic and social dualism found in many developing countries. There was no division between a capital-poor, technically-primitive, landlord-ridden agricultural sector and a progressive, prosperous industrial sector.

28) The general pattern was one of accelerating indigenous development during the aid period. Although the overall rate of growth of the GNP was fairly steady, other indicia suggest a rising tempo of domestic development. During 1951-55 the rise in domestic saving and capital formation was slow, exports did not expand, the foreign inflow of capital was negligible, and institutional innovations were few. During 1956-1960, more rapid progress was made along all these fronts, but self-sustaining development was not clearly in sight. During the last five years, 1961-65, the pace of evolution noticeably quickened, notwithstanding a steady reduction in the proportion of U.S. assistance to domestic output. Evidently, the domestic forces of growth expanded greatly in their relative strength.

Chapter VIII. Social and Political Development of Taiwan, 1951-65

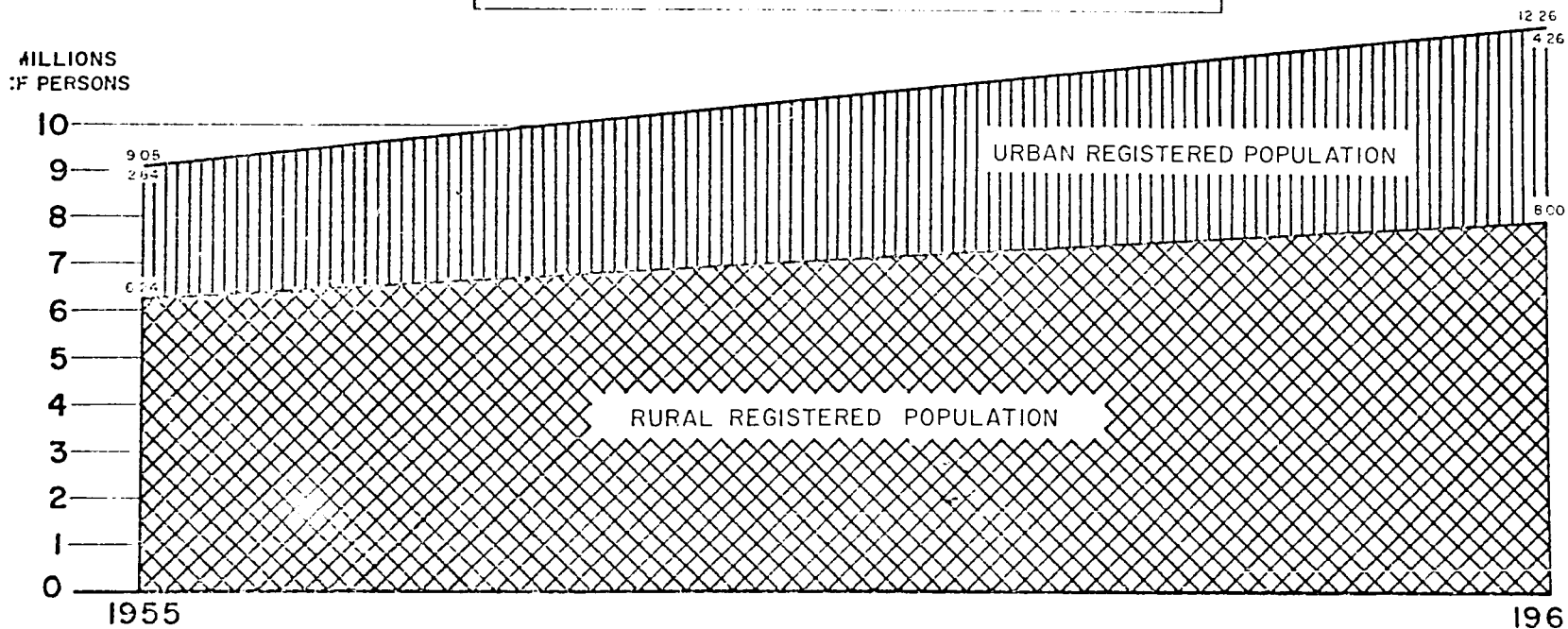
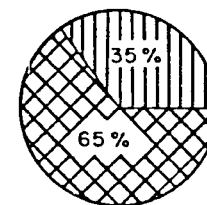
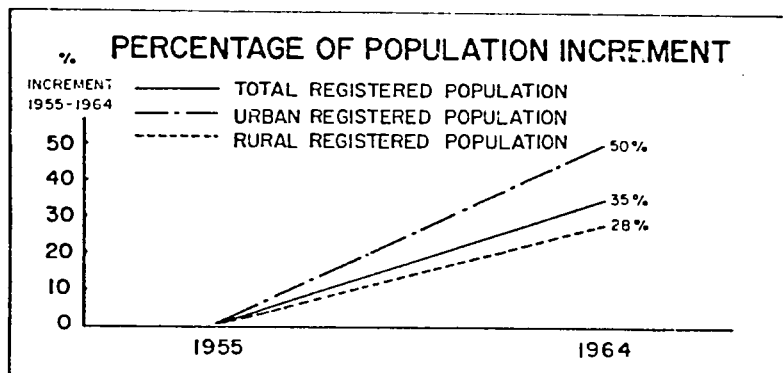
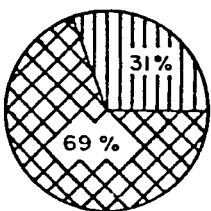
1) Taiwan developed along social and political as well as economic dimensions during 1951-1965. There were subtle and mutual interactions between economic and social changes. The modernization of a society requires acceptance and anticipation of change by more and more individuals, and a growing confidence by people in man's ability to control and influence his environment.

2) Taiwan's society became more healthy, more literate, more urbanized, more mobile, more communicative, and more participative. The movements of indices of health, literacy, urbanization, mobility, use of mass media of communication and social organization, together delineate and measure the modernization of Taiwan's society during the fifteen-year aid period.

3) Because of improved health facilities and nourishment, Taiwan's people gained greatly in life expectancy. Between 1951 and 1963 malaria was wiped out, parasitic diseases among children radically reduced, and the death rate from tuberculosis cut by three-fourths. Daily nutrient availability rose from a deficit to surplus, according to FAO standards. Population having sanitary water facilities increased from 20 to 30 per cent. The life expectancy of males at birth increased from 51.7 to 65.2 years and of females from 54.7 to 67.6 years. However, serious deficiencies of sanitary sewerage facilities and potable water remained in 1965.

4) The literacy rate--percentage of population age six and over that could read and write--rose from 57 per cent to 76 per cent during 1951-63. The remarkable expansion of this foundation of social modernity was the product of the GRC policy of compulsory, universal, free public schooling

URBAN-RURAL DISTRIBUTION OF THE YEAR-END REGISTERED POPULATION 1955 · 1964



through the sixth grade. With wider literacy, skills were more rapidly diffused and perceptions of opportunities and environmental changes quickened.

5) Although the urbanized percentage of the total registered civilian population increased only from 31 per cent in 1955 to 35 per cent in 1963, growing commuting from the country also swelled the importance of cities.

An already densely populated and relatively urbanized society became more so. This trend created external economies for economic growth. It also gave rise to the typical urban problems of city planning, slum clearance, traffic control, welfare, health and sanitation.

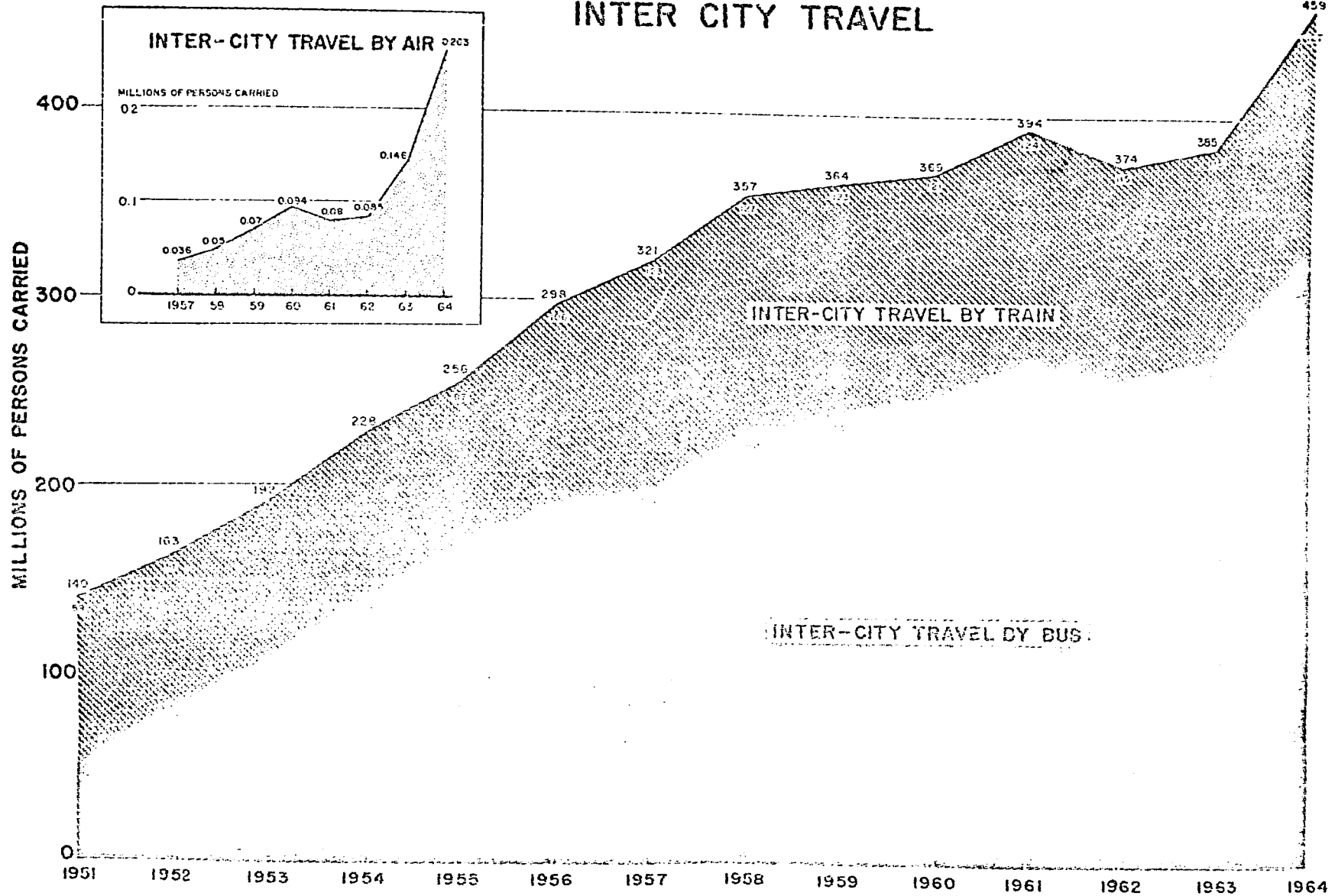
6) A striking rise in the mobility of people was reflected in indices of inter-city travel and by wider possession of bicycles and motor vehicles.

Thus the daily average of bus passengers per 1,000 population rose from 140 in 1951 to 910 in 1963. Growing physical mobility was the basis for rising psychic, occupational and social mobility. It speeded up the propagation of innovations, and the personal experience and acceptance of change.

7) Use of mass media of communication soared. For example, the average number of radio receiving sets per 1,000 population was 31 in 1951 and 490 in 1964. The circulation of local newspapers more than doubled from 350,000 to 750,000. The number of telephone receivers per 10,000 population tripled from 29 to 121.

8) Social organizations grew apace in number and in membership. The number of different social, professional and trade organizations more than doubled, and aggregate memberships more than tripled, while population grew by 50 per cent. The strong trend toward social organization was both cause and effect of rising urbanization, literacy, mobility, and communication.

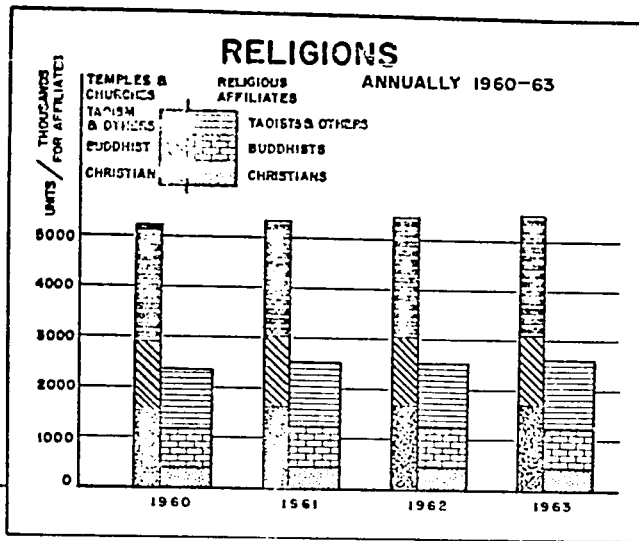
INTER CITY TRAVEL



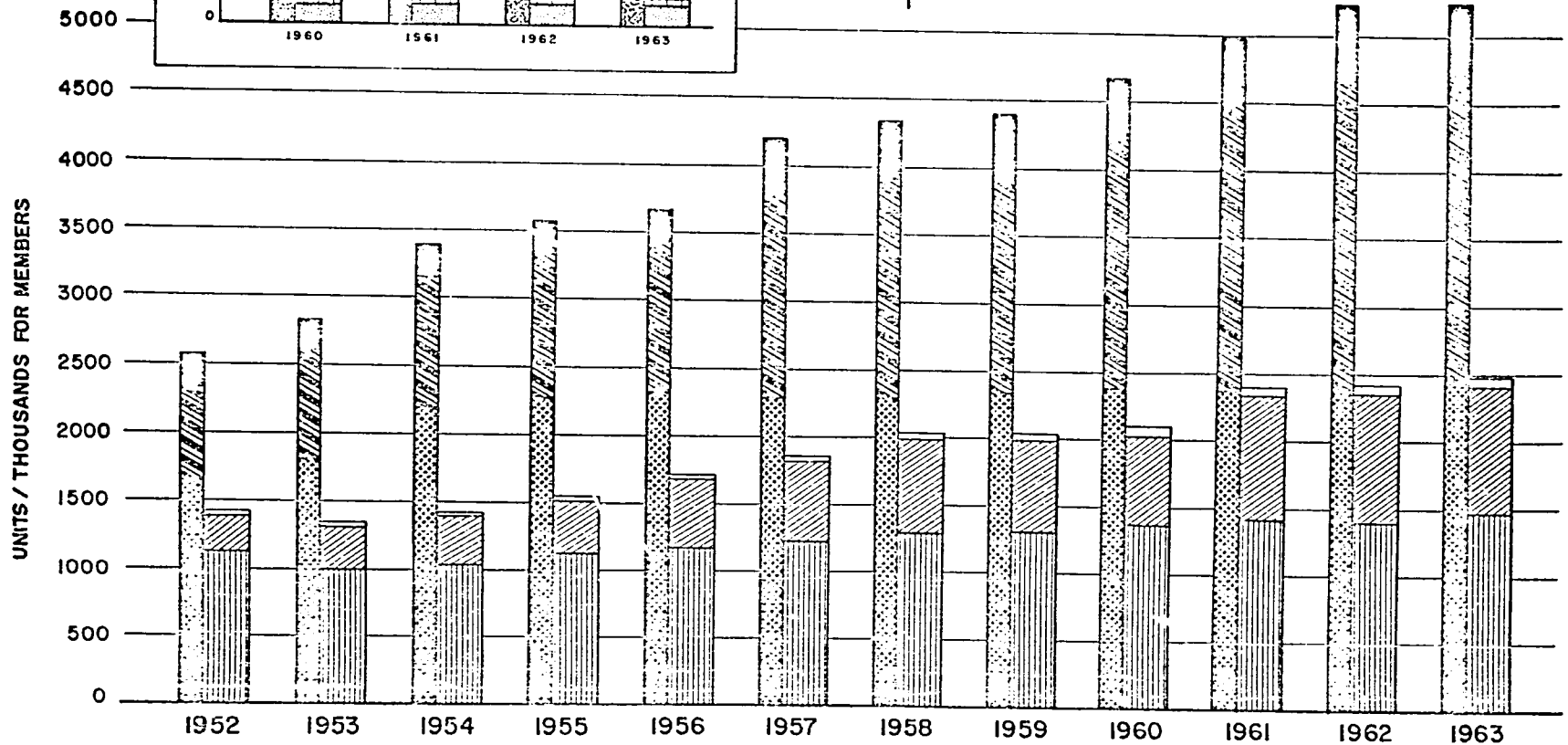
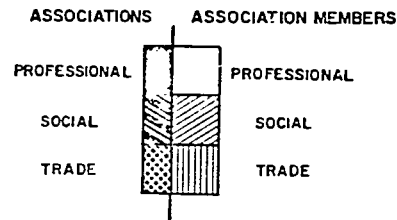
9) There were no apparent basic changes in the social relations between the native Taiwanese and Mainland Chinese communities during 1951-1965. There was a growing mutual appreciation of their complementary economic interests. Although no clear trend was apparent by 1965, it appeared likely that an extended period of social stability might bring more intermarriage and professional and social intermingling of the two groups, as their youth came to maturity and positions of leadership.

10) Land reforms during 1949-1953 and the ensuing industrialization of the economy put significant social changes in motion. In the country, there was a loosening of family ties, a replacement of the hierarchical landlord-tenant relationship by more democratic and impersonal rural organizations (e.g. farmers' associations) and a spread of egalitarianism among the farmers. These changes were the product of land redistribution, wider education, and the growth of rural organizations. The traditional social and economic power of the landlord diminished. In the cities, industrialization brought new social tensions and pressures, as a consequence of rising inequalities of income and a dearth of social services and lack of protection of the crowded industrial worker and his family.

11) In 1965 Taiwan confronted social problems that were serious but not insoluble. These problems included the separateness of the Taiwanese and Mainlander communities, an educational system not well geared to the needs of a developing economy, an exodus of talented youth to the U.S. and other countries for higher education, a swollen military and security organization that inhibited social innovation, population pressure, unemployment on the land, and an urbanization that was outrunning the other major variables of social modernization.



CIVIL ASSOCIATIONS ANNUALLY 1952-63



12) Overall, Taiwan made striking progress during 1951-65 in evolving into a modern, diversified agro-industrial society. Although there is no comprehensive "index of social progress," the rate of social development appears to have been of an order of magnitude comparable to the high growth rate of the GNP.

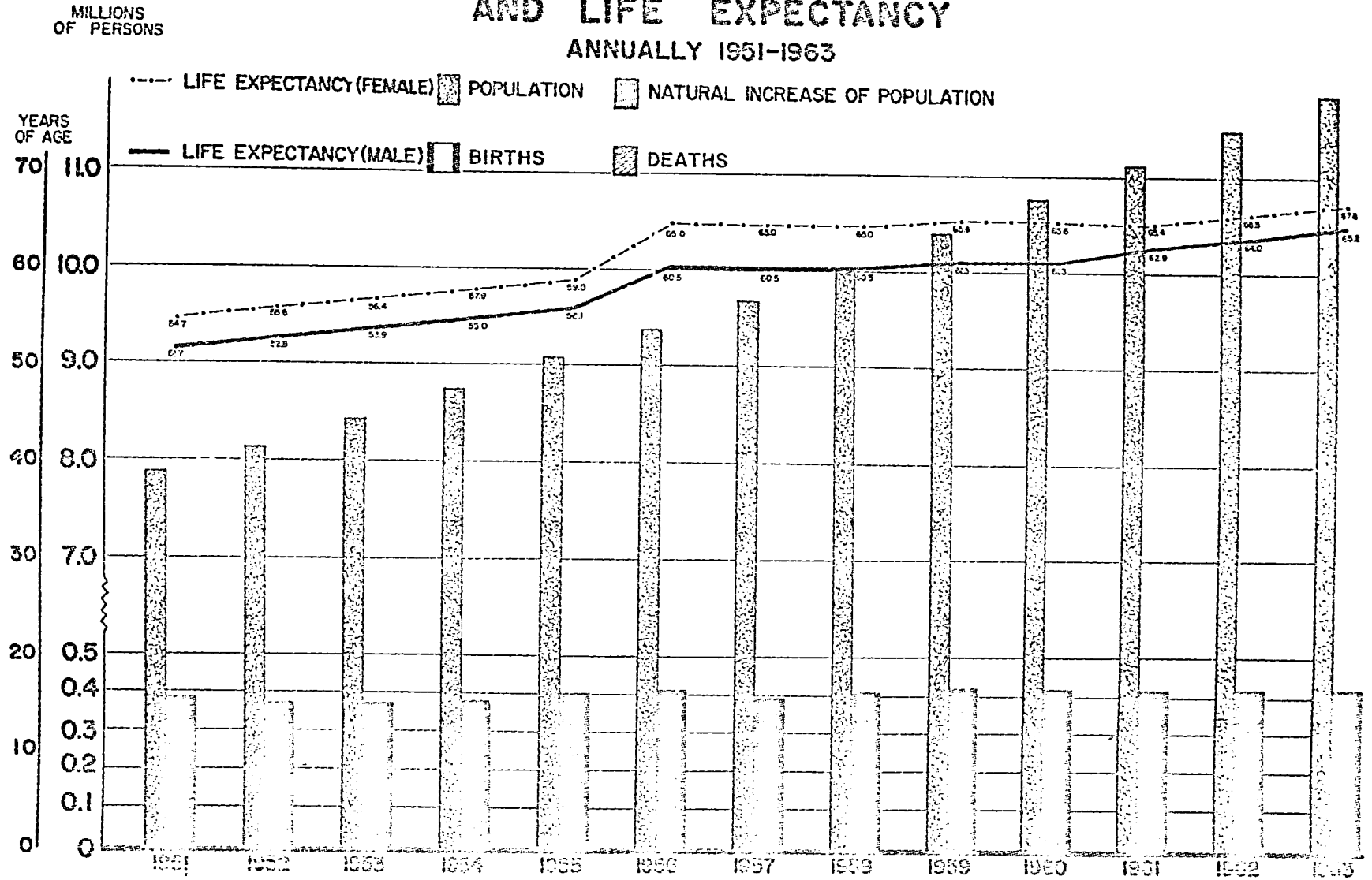
13) In contrast to its rapid economic and social development, there was little outward change in the political structure of Taiwan during 1951-65. The formal governmental structure remained stable, and was dominated by the Kuomintang. The power base remained narrow and centralized, with the authority of the President close to absolute in those matters in which he chose to exercise it.

14) The GRC and the Kuomintang were best described as being authoritarian rather than totalitarian. Notwithstanding a high centralization of authority and a pervasive security system, political controls were neither absolute nor total. There was a measure of democracy which was more than a facade, yet less than genuine and complete.

15) The political processes of government at the Central and Provincial levels were marked by atrophy of the legislatures and rising efficiency of the executive. Lack of elections was a source of attrition of the national legislature, and the provincial assembly lacked power. At the same time, the Central and Provincial ministries gained in competence and probity. Public criticism of the government became more outspoken on issues such as corruption, but not to the point of challenging basic GRC objectives.

16) There was a significant increase in political activity and controversy among local governments and organizations. Local elections, for

BIRTHS, DEATHS, POPULATION AND LIFE EXPECTANCY ANNUALLY 1951-1963



the most part, were honest and contested. The stirrings of a more democratic order were manifest at the local levels, particularly in rural communities among farmers' and irrigation associations.

17) The native Taiwanese continued throughout the aid period to have but little representation in top positions of the central government. GRC leaders did not absorb large numbers of Taiwanese into . government intended to rule all of China. The effects of this policy on Taiwanese attitudes is uncertain. The most tenable view is that the Taiwanese were mainly concerned with economic affairs.

18) The political stability and military security of Taiwan contributed greatly to its economic progress during 1951-1965. The Government of the island, backed by strong military defense and police forces, behind which stood U.S. military might, maintained a stable environment within which economic development could occur. Within this framework, local political changes did come about and new social and economic institutions emerged.

Chapter IX. Effects of the Military Burden on Taiwan's Development

1) Measurement of the net military burden on Taiwan's economy is necessary to evaluate the effects of U.S. economic aid. How much faster could Taiwan have developed without a heavy military burden? What were the net effects of the GRC military establishment and the MAP upon the country's economic evolution? Can a less developed country support a big military establishment and also finance rapid development without continued large external support? In measuring the net military burden, this study accepted without evaluation Chinese military missions, force structures and expenditures, and the size and composition of the U.S. Military Assistance Program.

2) The military forces of Free China were among the largest in the world in proportion to population. They comprised about 600,000 men, equal to 7.6 per cent of Taiwan's civilian population of 7,869,000 at the end of 1951 and 4.9 per cent of its population of 12,100,000 at the end of 1964. They consisted of the Army, Navy, Air Force, and the Combined Service Force which provided supply and logistical services to all armed forces.

3) Free China's military expenditures were among the highest in the world in proportion to GNP or governmental outlays. During 1951-1965 military expenditures consistently averaged 9 to 11 per cent of the GNP. They consistently formed 70 to 80 per cent of the expenditures of the national government, and 40 to 50 per cent of the combined outlays of all levels of government. These outlays were apart from the large U.S. Military Assistance Program (MAP) to Free China, which consisted primarily of weapons, transportation equipment and other military hardware.

4) The true military outlay was about 90 per cent of the GRC military budget expenditures. The civilian economy of Taiwan provided "hidden" (unbudgeted) subsidies to the military establishment in the form of rice, transportation, electricity and other items for which the military paid less than market prices. However, the military budget included items ordinarily charged to a civilian economy, whose value more than offset these subsidies. They included pay and living allowances for overage military personnel, outlays on training useful in civilian life, the value of military labor and equipment used on public works, and construction of housing and hospitals used partly for civilian purposes. Abolition of the military establishment would have released about 90 per cent of GRC military budget expenditures for other purposes.

5) The U.S. Military Assistance Program apparently did not have significant direct effects upon Taiwan's development. Apart from the military hardware provided by the MAP, the construction and training it financed appeared to have had only minor civilian by-products. This judgment is provisional, because lack of available data precluded a detailed analysis of the usage of the end-items provided by the MAP.

6) Military Budget Support provided to the GRC from aid-generated local currencies had indirect developmental effects. The reason was that a large reduction or elimination of MBS would have resulted in less developmental spending by Chinese, rather than in a lower level of military spending or higher taxes. Over the period 1952-1965 MBS amounted to \$368 millions, an average of \$26.3 millions a year. About 36 per cent of all aid-generated local currency allocated for use during 1951-1965 went for MBS.

TABLE IX-1

Uses of Military Budget Support in Taiwan, Annually 1952-1964

(\$1,000)

<u>Fiscal Year</u>	<u>Construction</u>	<u>Procurement</u>	<u>General Budget Support</u> ^{1/}	<u>Total</u> ^{2/}
1952	\$ 8,479	\$ 12,639	\$ 13,897	\$ 35,015
1953	8,379	11,668	4,773	24,820
1954	17,427	16,325	3,059	36,811
1955	19,986	8,358	8,724	37,068
1956	5,625	3,707	11,004	20,336
1957	17,252	3,804	7,806	28,862
1958	5,524	3,810	15,448	24,782
1959	9,558	8,004	10,122	27,684
1960	3,021	9,326	11,135	23,482
1961	5,212	2,715	13,622	21,549
1962	6,743	5,652	8,398	20,793
1963	7,725	16,259	2,666	26,650
1964	6,000	15,250	---	21,250
1965	3,875	15,125	---	19,000
	<u>\$124,806</u>	<u>\$132,642</u>	<u>\$110,654</u>	<u>\$368,102</u>

^{1/} Prior to FY 1963 GBS included charges for POL, rail freight, telecommunication, and spin-weave-and dye (textiles). In FY 1963 GBS included only spin-weave-and dye (textiles) which were discontinued in FY 1964 upon the determination that the charges were in direct support of labor and overhead and did not lend themselves to adequate control. POL charges in FY 63/65 included under procurement.

^{2/} U.S. dollar figures were derived by converting the NT dollar figures at the exchange rate prevailing at the time of input; the rate ranged from 10.3 to 1 in FY 1952 to 40 to 1 in FY 1965.

Source: U.S. Aid Mission to China.

7) The macroeconomic effects of the net military burden were measured by constructing a No-Military-Burden Growth Model of Taiwan's economy. On the basic assumption that military spending was eliminated, the following conjectures were made about changes in the major growth determinants of the economy: (a) governmental and private consumption would have risen, but the ratio of gross saving to GNP would have been 2 percentage points higher, (b) release of manpower would have reduced costs and expanded exports up to a point when the export/GNP ratio was 2 percentage points higher than the actual ratio, (c) foreign exchange would have been released from military uses to purchase investment goods, (d) the marginal capital/output ratio would not have changed.

8) With no military burden but the same amount of U.S. aid Taiwan's GNP might have expanded at an average annual rate of about 9.6 per cent a year, compared with an actual 7.6 per cent. Per capita GNP could have grown about 6 per cent a year, and Taiwan could easily have been the fastest-growing economy in Asia. Recovery of the prewar level of per capita GNP would have been attained in 1954 instead of 1956. The actual 1964 level of total and per capita GNP would have been reached much earlier.

9) The military burden, while onerous, was not as heavy a drag on Taiwan's economy as is generally believed. The country's redundant manpower made the opportunity costs of utilizing manpower in military service relatively low. The preponderance of military outlays were made for subsistence of servicemen and their families, and would not have been saved under a no-military-burden assumption. In any event, the effective constraint upon Taiwan's development was the amount of available foreign exchange to finance investment rather than the amount of domestic saving.

10) Elimination of both economic aid and the military burden would have retarded Taiwan's progress about a decade. A No-Aid-No-Military-Burden Growth Model indicated that (a) the average annual growth rate of GNP would have been reduced to about 5.2 per cent, (b) the prewar level of per capita GNP would not have been recovered until 1965, (c) GNP in 1964 would have been only 70 per cent of the actual amount, and (d) actual 1964 levels of GNP would not have been achieved until 1972 and of per capita GNP until 1977.

11) The positive influence of U.S. economic aid far outweighed the negative effects of the military burden on Taiwan's development. Although aid averaged only 6.4 per cent of GNP whereas GRC military expenditures averaged 10 per cent, aid supplied the critical shortage of foreign exchange to buy capital goods and industrial materials, whereas--given the MAP--the military forces absorbed mainly manpower and other local resources in ample supply.

12) A semi-developed economy like Taiwan in 1965 can both support a large military force and also finance its own rapid development, provided that necessary military hardware is supplied to it by an external source. This is the lesson that may be learned from the case of Free China.

PART D

EVALUATION OF AID-DEVELOPMENT RELATIONSHIPS

Chapter X. United States Influence on Chinese Economic Policies

1) The economic policies of a country are more important than the amount of external assistance it received in determining its development.

Policies favorable to development can not only expand the amount of domestic investment, but can also greatly raise its productivity and that of foreign aid. Because foreign aid is normally a minor fraction of total developmental resources--about one-third in the case of Taiwan--and because the allocation of aid is crucial to the results obtained, economic policies are a much more weighty determinant of the pace of progress than the level of aid.

2) The U.S. Congress expected AID, at least after 1958, to exert influence upon the governments of recipient countries to pursue policies conducive to development. Congress wisely made "self-help" measures by a country a condition of eligibility for economic assistance, recognizing that this would enhance its productivity. It expected AID to utilize all of its powers, including those of providing or withholding assistance, to attain this end. To determine whether this influence was fully and wisely exerted in Free China, it is first necessary to understand the basic objectives of the GRC and of its ruling party--the Kuomintang.

3) The primary motive of the GRC was political and not economic--to re-establish its authority over all of China. Its defeat and expulsion from the Asian continent by Communist forces generated a passion to return to the mainland, to erase the ignominy suffered in the past, and to redeem its reputation in the eyes of the world. Although economic goals were consistently regarded as being subservient to this political purpose, and development as a means to an end rather than as an end in itself, the strong will

and energy of many GRC economic officials had its genesis in this expatriate dynamism.

4) The economic ideology of the GRC called for a "mixed" economy of public and private enterprise and a wide distribution of wealth and income. It was based upon Dr. Sun Yat-sen's Principle of People's Livelihood, which sought to combine features of socialism and capitalism. The founder of the ROC advocated equalization of land ownership, measures to prevent concentration of wealth and income, state enterprises in some industries, and state control of business to ensure efficient use of resources. Within this framework, he upheld the institutions of private property, profit incentives, freedom of enterprise, and competitive markets. This eclectic ideology left room for a broad spectrum of alternative economic policies.

5) GRC economic policy was also shaped by a determination to avoid errors of the past, notably price inflation and excessive economic inequality. The initial economic goals of the GRC in Taiwan were to bring about monetary and price stabilization and to equalize land ownership by land reform. Land reform was executed with conspicuous success in three steps during 1949-1953. Price inflation was brought under control, although not eliminated, by 1955.

6) AID exerted strong and continuous influence upon the formulation of GRC economic policies and thereby fostered Taiwan's development. This is the consensus of Chinese officials, and is amply buttressed by the record. The primary instruments used by AID were the written analyses and oral persuasion of its staff members and outside specialists; but the ultimate weapon of offering to increase or threatening to withhold aid was used.

successfully on several occasions. However, AID did fail to bring about desirable changes in a number of Chinese economic policies; and it gave questionable advice to the GRC in some instances.

7) A continuous colloquy between GRC and AID officials was the instrument of U.S. influence. Personal contacts between Chinese and American officials were very frequent and effective throughout the aid period. Their effectiveness was enhanced by the existence of the special institutions established by the GRC for administering aid, notably ESB, CIECD and JCRR. A core of mutual interests, reciprocated attitudes of confidence, and frequent personal meetings were a sine qua non of the success of aid in Free China-- as they must be in any country. A protracted educational process took place.

8) The U.S. wisely did not use economic aid as a lever on the GRC to make political reforms. Thus it did not create unrest or uncertainty about governmental stability, which would have thrown obstacles in the way of development. By focussing upon rapid material progress, based on a vigorously expanding private sector, U.S. aid indirectly helped to disperse and to create new power centers in society. These should, in time, create irresistible pressures for a fuller measure of democracy.

9) Neither AID nor the GRC put sufficient emphasis on long-range surveys of developmental needs and resources early in the aid period. The three Four-Year Plans of the GRC for the periods 1953-56, 1957-60, and 1961-65 were of the partial, indicative, goal-setting type. AID wisely did not press the GRC to engage in detailed mandatory economic planning. However, Taiwan's development and the productivity of aid would have been enhanced if, early in the aid period, long-range economic goals had been set and

studies had been made of the capital, energy and manpower resources needed to attain them.

10) The two major thrusts of AID influence were to elevate development as a Chinese national goal and to foster private enterprise. AID consistently and successfully pressed the view that development was important in itself; and that it would also serve basic GRC political purposes, both by creating a strong industrial base for military defense and by demonstrating to the world the ability of the Chinese people to improve their livelihood rapidly under free economic institutions. AID also played a vital role in the adoption of policies by the GRC under which the private sector burgeoned in both industry and agriculture and dominated the economy by 1965.

11) Initially, the GRC was not strongly predisposed to development of the private sector. When it took over Taiwan in 1945 the GRC inherited the large system of public enterprises operated by the Japanese colonial administration in transportation, communications, power, salt, tobacco and spirits. It also acquired the large Japanese private enterprises in sugar, iron and steel, aluminum and cement. In 1951 there were mainly small-scale firms in private industry, and the public sector accounted for 55 per cent of industrial production. Most GRC officials were public administrators with predilections for the public enterprises that provided needed careers for the ruling group.

12) AID emphasis on private enterprise came during the latter part of the aid period, after the environment and Chinese attitudes were favorable. The broad developmental strategy upon which AID and the GRC agreed emphasized, in more or less chronological order, monetary stabilization,

agricultural production, building of infrastructure, and private industrial investment. This well-conceived sequence of investment allocation and emphasis in economic policy was the crucial factor in the economic success of Taiwan and the high productivity of U.S. aid.

13) Many GRC measures to improve the investment climate and to energize the private sector were either sponsored or strongly supported by AID. Some public firms were transferred to private ownership in 1954 the same year in which the Small Industry Loan program was begun. CPTC was established in 1955. Taiwan Handicraft Promotion Center was founded in 1956. The Statute on Foreign Investment was liberalized in 1959 and again in 1964. IDIC and CDC were organized in 1959. The Statute for the Encouragement of Investment was passed in 1960, and the Bank of Communication was reactivated. In 1965 two American commercial banks were licensed to do business in Taiwan, and a tax-free industrial processing zone was established.

14) The 19 Point Program of Economic and Financial Reform of 1960 was AID's most comprehensive effort to influence GRC economic policy. AID held forth the inducement of a special \$30 - \$40 million program loan to the GRC, on condition that it would adopt the following measures to bring about accelerated economic growth: encourage saving and investment, establish a capital market, sell industrial enterprises to private investors, speed investment projects, adopt fiscal reforms, remove subsidies, rationalize utility rates, establish a central bank, liberalize exchange and trade regulations, and hold military expenditures to the 1960 level. Many of the measures were taken, but some--notably the ceiling on military expenditures--were not. The program loan was therefore reduced to \$20 million.

15) AID influence was successfully exerted to rationalize public utility rates and liberalize exchange controls. The GRC did unify and stabilize its exchange rate. It was persuaded to increase rail and electricity rates toward competitive market levels, and to reduce some governmental subsidies.

16) AID influence was limited in the field of taxation and monetary policy. AID made persistent efforts to induce the GRC to reduce military expenditures, raise revenue levels, curtail the government deficit, limit increases in money supply, and inaugurate effective central banking controls of credit. Although GRC policies would have been more inflationary without U.S. pressure, important changes in fiscal policies would have required alteration of deeply-held Chinese military and political objectives. Also, AID dealt with issues at a technical level and did not provide the counsel of independent authorities on strategic issues.

17) AID failed to induce the GRC to transfer most government enterprises, including the rice/fertilizer barter system, to private ownership and competitive markets. AID sought to persuade the GRC to terminate its counter-productive system of compulsory exchange of rice for fertilizer at artificial rates, which created disincentives to both rice production and fertilizer usage. It pressed the GRC to privatize public enterprises in industries that were not "natural monopolies." Its failure was due to the political sensitivity of such reforms, and to an inability to propose satisfactory alternatives.

18) Debatable positions were taken by the AID on some issues of economic policy. They included advice to reduce interest rates by

government decree, to shift from indirect to direct taxation, to limit increases in money supply drastically, and to force increases in saving by higher taxation. It is probable that such moves would have had counter-developmental results.

19) AID can and should exert strong influence upon the governments of aided countries to shape policies favorable to development. Only if a government has a mutual interest in development, and is responsive to U.S. efforts to use developmental resources efficiently, is there a sound foundation for an aid program with developmental objectives. This lesson may be learned from the case of Free China.

Chapter XI. Macroeconomic Effect of United States Aid

1) The overall effect of aid upon Taiwan's economic growth during 1951-1965 is the central test of its productivity. Herein, this effect was measured primarily by the use of No-Aid Economic Growth Models. The growth/aid relationship was then judged by (a) Chinese and American objectives (the Target Attainment Criterion), (b) Taiwan's previous growth as a colony of Japan (the Historical Comparison Criterion), and (c) growth/aid relationships in comparable Asian countries (the Contemporary Comparison Criterion).

2) Annual ratios of aid imports to Taiwan's gross domestic capital formation greatly understate the true effects of aid. These ratios suggest that only about 30 per cent of the annual gain in Taiwan's GNP--about 2.3 percentage points of the average annual 7.6 per cent growth rate--were attributable to aid. They are partial and misleading, because they ignore the cumulative, dynamic and "multiplier" influences of aid upon capital formation.

3) The method of calculating the weighted average incremental aid/GNP ratio during 1951-1965 was not feasible. The myriad of developmental outlays financed by aid, each with its own payout period, multiplier effect and yield, made this method impractical to apply directly. However, its approximate value may be inferred from other measures of the macroeconomic effect of aid. (See point 7)

4) The macroeconomic effect of aid to Taiwan could not be estimated by the use of linear programming or sophisticated econometric models. Reliable data were lacking on inter-industry relations, capital stock, and other variables necessary for the application of sophisticated methods.

5) The macroeconomic effect of aid to Taiwan was estimated by constructing simple No-Aid Economic Growth Models of the Harrod-Domar type.

The models employed various sets of assumptions about the probable values of the average savings/GNP ratio and the incremental capital/output ratio in Taiwan, if there had not been any U.S. aid. Use of even this simple approach was handicapped by the unreliability of national economic statistics prior to 1956, and their absence prior to 1951.

6) Even if Free China had been able to survive the initial years without U.S. aid--which is by no means certain--aid probably doubled the annual growth rate of GNP and cut thirty years from the time needed to attain 1964 standards of living. These probable conclusions were indicated by the No-Aid Growth Models. Average annual growth of GNP would have been well under 4 per cent, and of per capita GNP under 1 per cent. Taiwan would have realized only about 58 per cent of its actual growth by 1964. Not until 1980 would GNP have reached the actual level of 1964, and not until 1995 would GNP per capita have reached this level.

7) Aid probably had an overall multiplier effect of about 2.0 upon the average annual increment of Taiwan's investment and output. The growth of Taiwan's economy was effectively limited by available foreign exchange (a trade gap) rather than a shortage of domestic saving (a domestic resources gap). Aid broke the bottleneck with the large amount of foreign exchange that was essential to import the industrial materials and capital goods needed for rapid development, and enlarged the amount of domestic saving that could be utilized in investment. Each dollar of aid probably induced, on the average, about \$1.00 of additional investment that would not have been made otherwise.

7a) Removal of barriers by the U.S. and other countries to Taiwan's exports would have reduced the need for aid. Taiwan would have been able to achieve the same developmental results with less aid, if it had been able to expand its sugar and other exports more rapidly. It had a trade-limited economy. U.S. aid closed the gap in external resources needed for rapid development until the rapid upsurge in Taiwan's exports after 1961 enabled it to do so.

8) Judged by the Target Attainment Criterion, U.S. economic assistance succeeded superlatively well. Supercharged by \$1.5 billion of external aid over 1951-1965, Taiwan's economy was propelled from deep dependence into a state of self-sustaining development within a span of fifteen years. Over the twelve-year period 1953-65 of the three Four-Year plans of the GRC, actual growth of GNP was slightly higher than the ambitious targets of the Plans. Taiwan's performance also overshot AID's original goal of economic independence by mid-1968. (AID did not establish target growth rates for Taiwan's GNP.)

9) Judged by the Contemporary Comparison Criterion, aid to Taiwan was more productive than in comparable Asian countries. When Taiwan is compared with Korea, Philippines, Thailand and Turkey--all relatively small, semi-developed Asian countries that received substantial American economic assistance--it is found that not only was the annual growth rate of Taiwan's GNP much higher, but that the increase in GNP per dollar of aid was higher, except in Thailand. This was true notwithstanding that the military burden carried by the GRC formed a much larger fraction of its GNP than it did in the other countries.

10) Judged by the Historical Comparison Criterion, aid to Taiwan was also highly productive. The 7.6 per cent average annual growth of Taiwan's GNP during 1951-1965 was 3.6 percentage points higher than the 4.0 per cent growth rate during 1911-1940--Taiwan's latter years as a colony of Japan. Comparison of the two periods is meaningful, because Taiwan's "colonial burden" in the earlier period apparently took a somewhat larger fraction of its domestic product than its "military burden" took in the latter period. The inference is that U.S. aid boosted the average annual growth of GNP at

TABLE XI - 1

Actual and Planned Rates of Growth of GNP in Taiwan, by Planning
Period and Major Sectors of the Economy, 1953-1968

	<u>GNP</u>		<u>Agriculture</u>	<u>Industry</u>	<u>Infra- structure</u>	<u>Human. Resources</u>
	<u>Total</u>	<u>Per Capita</u>				
<u>Average Annual Growth (Per Cent)</u>						
<u>1953-56 - First Plan</u>						
Planned	6.2	3.2	3.7	8.3	6.2	2.9
Actual	7.6	3.9	5.1	9.2	5.4	8.9
<u>1957-60 - Second Plan</u>						
Planned	7.8	4.1	4.5	9.3	9.3	6.8
Actual	7.2	3.8	7.2	6.8	12.3	6.1
<u>1961-64 - Third Plan</u>						
Planned	8.0	4.8	5.4	9.5	9.4	7.2
Actual	<u>7.8</u>	<u>4.5</u>	<u>4.1</u>	<u>10.2</u>	<u>5.6</u>	<u>6.3</u>
<u>1953-64 - Three Plans</u>						
Planned	7.4	4.0	4.5	9.1	8.1	5.6
Actual	7.5	4.1	5.5	8.7	7.7	7.0
<u>1965-68 - Fourth Plan</u>						
	7.0	4.7	4.1	7.8	7.9	7.9
<u>Percentages of Planned Actual to Planned Increases in Amounts of Production</u>						
<u>1953-56 - First Plan</u>	125	-	142	112	85	333
<u>1957-60 - Second Plan</u>	96	-	170	72	134	107
<u>1961-64 - Third Plan</u>	<u>97</u>	<u>-</u>	<u>89</u>	<u>102</u>	<u>67</u>	<u>105</u>
<u>1953-64 - Three Plans</u>	101	-	129	94	93	136

Source: Computed from data in Appendix B.

TABLE XI-2

Actual and Planned Gross Capital Formation in Taiwan
by Sectors and by Planning Period 1953-1968 (Percentage Distributions)

	<u>Total GNP</u>	<u>Agriculture</u>	<u>Industry</u>	<u>Infrastructure</u>	<u>Resources</u>
<u>1953-1956</u>					
Planned	100.0	33.7	36.8	29.5	0
Actual	100.0	18.6	49.1	18.3	14.0
<u>1957-1960</u>					
Planned	100.0	26.4	28.9	25.3	9.4
Actual	100.0	16.9	41.0	25.0	17.1
<u>1961-1964</u>					
Planned	100.0	18.7	34.2	32.5	14.6
Actual	100.0	13.7	46.9	24.3	15.1
<u>1965-1968</u>					
Planned	100.0	12.9	45.8	21.1	20.2

Source: Computed from data in Appendix B

least 90 per cent--a rough confirmation of conclusions reached from the No-Aid Growth Models.

11) U.S. economic aid should have large expansionary effects upon Taiwan's growth during the post-aid period. These will arise from arrivals of dollar aid obligated prior to July 1, 1965, investment of local currency funds generated from previous U.S. dollar aid arrivals, and carry-over effects of previous aid-financed investment, especially in infrastructure and human resources. The importance of these effects is indicated by the fact that both AID and the GRC projected a 7 per cent annual growth of GNP beyond mid-1965 without further U.S. concessional assistance. The build-up of Chinese foreign exchange holdings and the establishment of its credit in the world were products of aid that did not appear in GNP up to mid-1965, but which will help to expand it long thereafter.

12) By all macroeconomic tests aid to Taiwan was highly productive; but additional criteria are needed to estimate how far it missed optimal productivity. In order to estimate the amount of "waste" in the aid program, the additional margin of development that could have been attained with the same assistance, or how much less aid could have produced the same development, it is necessary to analyze the inter- and intra-sectoral allocations of aid, its instrumental structure, and the process of aid administration.

TABLE XI-3

Comparison of U.S. Aid and Growth of GNP in
Five Small Asian Countries During Recent Periods

	Taiwan 1953-63	Korea 1953-63	P.I. 1960-63	Thailand 1956-63	Turkey 1958-63
<u>Growth Rate - Per Cent</u>					
Population	3.2	2.9	3.3	2.9	2.9
GNP	7.0	4.8	5.0	6.3	3.9
Per Capita GNP	3.8	1.9	1.7	3.4	1.0
<u>Percentage of GNP</u>					
Consumption	88.3	100.6	87.9	85.6	87.1
Gross Domestic Investment	<u>19.0</u>	<u>14.0</u>	<u>13.9</u>	<u>16.5</u>	<u>15.5</u>
TAR	107.3	114.6	101.8	102.1	102.6
Net Import Surplus	7.3	14.6	1.8	2.1	2.6
Gross Domestic Saving	11.7	-0.6	12.1	14.4	12.9
Total U.S. Economic Aid (\$m) (Fiscal Years)	1,120.0	2,944.0	228.0 ^R	273.0	1,024.0
Per Capita Per Year (\$)	9.7	11.4	2.0	1.3	6.1
As a Per Cent of:					
GNP	7.2	13.4	1.5	1.3	2.9
Gross Domestic Investment	38.1	95.9	10.9	8.0	18.6
Government Expenditures	39.9	75.6	16.1	14.1	18.1
<u>U.S. Economic Aid-financed Imports</u> <u>as a Per Cent of Total Imports</u>					
	26.0	37.8	4.6	1.9	19.5
1) U.S. Economic Aid to Gross Investment					
a) Amount of Aid	1,038.0 ^{1/}	2,944.0	228.0	273.0	1,024.0
b) As a Per Cent of Total Gross Investment	35.3	95.9	10.9	8.9	18.6
2) Increase in GNP					
a) Total (\$m)	940.0	934.0	546.0	1,134.0	1,139.0
b) Attributed to U.S. Economic Aid (2.a x 1.b)	332.0	896.0	60.0	101.0	212.0
3) GNP Increase Per \$ of U.S. Economic Aid (\$) (2.b ÷ 1)					
	0.32	0.30	0.26	0.37	0.21

R - Revised data

^{1/} Includes only U.S. aid invested, after deducting \$82 millions added to foreign exchange reserves.

Source: Computed from data compiled by AID, Washington.

Chapter XII. Overall Political and Social Effects of United States Aid

1) The social and political effects of U.S. foreign assistance programs have been neglected by AID as subjects of systematic study. In Taiwan--and in other aided countries--there is a dearth of basic statistics or serious analysis of such fundamental consequences of aid as changes in income distribution, the growth of the middle class, or the emergence of new political forces and economic groupings. Better foreign aid policies could be designed if ignorance of these matters were dispelled.

2) The primary socio-political effect of U.S. aid was to contribute to the stability of the Republic of China. By fostering rapid economic growth, whose fruits were widely distributed among the people, aid helped to attenuate unrest and enmity among dissident groups, to preserve the cohesion of the Mainlander minority, and to consolidate and extend its political power. Had no external assistance come to douse the fires of inflation and improve the material conditions of the Taiwanese people during the early Fifties, it is doubtful whether the Republic of China would have endured in its present form.

3) Although U.S. aid was not used deliberately as an instrument to bring about social and political change, such changes were a by-product of economic development. Aid-connected economic events having important social and political consequences include the massive land reforms of 1949-1953, the emergence of a vital private-enterprise sector of the economy largely dominated by native Taiwanese, and a virtual revolution of social life in the rural areas as a result of advancing technology and incomes.

4) U.S. aid helped to bring about social as well as economic modernization of Taiwan. Concomitant with the pervasive rise in productivity, output and incomes that are the indicia of economic progress, were amazing social improvements in health, education, urbanity, mobility, communication, and organization. Multifarious transfers of expertise by aid influenced and interacted with the indigenous factors of modernization.

5) Technical cooperation was the primary instrument of aid responsible for social change. Through technical cooperation new thought processes were begun, new patterns of social behavior were introduced, and new ways of working and living were brought into being. Aid brought change and modernization in its wake in all fields of technical assistance excepting in public administration, and primary and secondary education, where delayed effects may yet appear.

6) The anomalous role of the central legislative body (the Legislative Yuan) in the administration of aid was a principal reason for its effective execution through financially semi-autonomous agencies. CIECD and JCRR functioned well in the Chinese situation. They served to focus Chinese interests in development, which was necessary because of GRC preoccupation with political and security issues.

7) Land reform was expeditiously carried out, partly because those in charge of policy did not have vested interests in the land. Land reform disarmed rural political unrest and provided economic incentives to farmers. The well-designed system of compensation to Taiwanese landlords resulted in a transfer of the capital and energies of many of them to industrial development.

8) Aid-financed programs of the JCRR fostered rural leadership and organizations with potential political significance. The JCRR policy of responding directly to the "felt needs" of sponsoring rural organizations generated leadership capabilities and democratic organizational experiences among the farmers. The full consequences of this embryo agrarian movement remained to be felt.

9) Aid tended to produce a "political lag" in Taiwan behind the social and economic development of the country. Whereas the dominant political effect of aid was to consolidate and stabilize the power of the GRC, its dominant economic and social effect was to help energize the private sector and create new centers of economic power. By 1965 there was a "political lag" in Taiwan's development. It called for well-phased actions by the Nationalist government progressively to liberalize political rights, participation and institutions in order to afford healthy outlets for social pressures and tensions.

10) The economic development encouraged by foreign aid had important social effects since the effect of development was to heighten problems of growing urgency such as urban crowding and inequality in income and it made more evident the existence of an inept educational system. Growing unemployment and under-employment, urban workers lacking in proper housing and social insurance, fixed income groups whose real level of living was squeezed by inflation, and an educational system that was producing a surplus of university trained professionals but a deficit of skilled workers presented problems that cried for governmental action. The effect of U.S. aid on Taiwan's unemployment ratio is uncertain. While aid-financed improvements in agricultural technology reduced the number of jobs that would have existed on the land, aid-financed investment in infrastructure and industry created much additional employment.

Chapter XIII. Intersectoral Allocation of Aid and Developmental Strategy

1) The developmental strategy of a country embraces its economic policies for private investment as well as its allocation of public resources. Well-conceived investments of government funds can expand private investment; and vice-versa. An economy like that of Taiwan needs a developmental strategy, because market forces provide incomplete guidance to investment decisions and an efficient capital market is lacking.

2) The allocation of total investment resources--domestic plus external aid--both between and within major sectors of the economy must be studied. Although macroeconomic analysis has shown that the allocation of total investment resources in Taiwan was relatively good, inter-and intra sectoral analysis is necessary to judge how closely allocations approached optimality.

3) The basic criterion for maximizing developmental results is to distribute investment among competing uses so as to equalize their marginal social returns in the long run. Long run social rates of return take into account the direct and indirect multiplier effects of investment. They use the economy rather than the enterprise as the relevant accounting unit. Although this criterion is theoretically correct and provides a useful guide, it could not be directly applied to Taiwan for lack of requisite data.

4) The optimality of intersectoral allocations of investment was tested by a combination of proxy criteria. They included intersectoral comparisons of capital/output ratios, rates of growth of output, rates of utilization of fixed assets, estimated multiplier effects, and observed rates of return to investment in samples of aid projects. Confidence in

conclusions about relative over- or under-investment in different sectors increased to the degree that the application of different proxy criteria pointed to the same conclusion.

5) Four Sector and Two Sector Models of Taiwan's economy were used.

The Four Sector Model divided the economy into agriculture (including forestry and fishing) infrastructure (power, transportation and communication), industry (manufacturing, trade and services), and human resources (education, health, housing, administration and technical assistance). The Two Sector Model divided the economy into a Public Sector (government and public enterprises) and a private sector (all other economic activity).

6) Two categories of projects were studied in each sector--all aid projects and capital assistance projects. The latter excluded technical assistance projects. Only investment in capital assistance projects could be compared directly with available data on total domestic investment in each sector.

7) Total aid allocations were defined to include NT dollars generated from aid commodity imports as well as U.S. dollar project aid. Most aid projects utilized both U.S. dollars to buy needed imports of equipment and material and NT dollars generated from project and non-project aid imports to purchase labor and other locally available resources. (U.S. dollar equivalents of NT dollars are given herein.)

8) Total aid allocations provided the most comprehensive measure of joint AID-GRC allocational influence. Allocations of U.S. dollars and of aid-generated local currency were complementary in function and their administration was roughly coordinated. The proportions of the two kinds of

funds used to finance aid projects, and their total amounts, depended primarily upon the nature of the projects jointly approved by AID and the GRC, and upon their respective requirements of imported and domestic resources.

9) Of the \$1,049 millions of total aid allocations to all projects during 1951-1963, over 40 per cent was made to infrastructure. The next largest was made to agriculture, the next to human resources, and the least to industry. Infrastructure dominated both U.S. dollar project aid and also local currency aid. Agriculture's share was somewhat understated in that much aid went to the fertilizer and other farm-related industries in the industrial sector. Industry received the next highest proportion of U.S. dollar project aid, with agriculture and human resources following. The converse relationships obtained in the allocation of local currency aid. (See Table XIII-1) Aid to human resources was also understated, because there were important transfers of knowledge, skills and technology incorporated in the capital assistance projects of other sectors.

10) Of the \$810 million of total aid allocations to capital assistance projects during 1951-1963, 44 per cent went to infrastructure. Agriculture, industry, and human resources followed in turn. (See Table XIII-2)

11) The pattern of allocation of total aid among the four sectors was relatively stable throughout the thirteen-year period. Although there were large unsystematic year-to-year shifts, they reflected only the random influence of project aid obligations rather than any clear trend. Power, transportation and communications facilities properly and consistently were considered to be the limiting factor on Taiwan's growth, for which external resources were most urgently needed.

TABLE XIII-1

Allocations of U.S. Economic Aid to Projects in Sectors of Taiwan's Economy, 1951-1963

<u>Sector</u>	<u>U.S. Dollar Project Aid</u>		<u>NT Dollar Project Aid</u>		<u>Total Project Aid</u>	
	<u>Amount (Millions)</u>	<u>Per Cent</u>	<u>Amount (Millions)</u>	<u>Per Cent</u>	<u>Amount (Millions)</u>	<u>Per Cent</u>
Infrastructure	\$ 220.6	55.9	\$ 203.4	30.9	\$ 424.0	40.7
Agriculture	43.5	10.5	212.9	29.2	256.4	21.8
Human Resources	41.4	9.9	169.4	26.4	210.8	20.0
Industry	<u>78.7</u>	<u>23.7</u>	<u>78.7</u>	<u>13.5</u>	<u>157.4</u>	<u>17.5</u>
TOTALS - FOUR SECTORS	\$ 384.2	100.0	\$ 664.4	100.0	\$1,048.6	100.0
Private	\$ 26.5	6.9	\$ 37.5	5.6	\$ 64.0	6.1
Mixed	52.3	13.6	232.9	35.0	285.2	27.2
Public	<u>305.3</u>	<u>79.5</u>	<u>394.0</u>	<u>59.3</u>	<u>699.3</u>	<u>66.7</u>
TOTALS - TWO SECTORS	\$ 384.2	100.0	\$ 664.4	100.0	\$1,048.6	100.0

¹Includes projects involving both governmental and private ownership or operation in some degree, and projects in which recipients of U.S. dollar aid assisted both governmental and private enterprises, such as the China Development Corporation. Major element is agricultural projects sponsored by rural organizations of mixed public and private ownership.

Source: See Appendix A - Intersectoral Allocation of U.S. Economic Aid Funds to Taiwan - for explanation of sources and methods of deriving non-duplicating allocations of U.S. dollar and NT dollar project assistance among sectors.

12) Nearly half of the \$2,605 millions of net domestic investment in Taiwan during 1951-63 was made in industry. The balance was distributed among the other three sectors, with agriculture accounting for only one-eighth. The ranking of the four sectors according to proportion of total domestic investment was almost the reverse of their ranking in U.S. capital assistance received. That is, aid was relatively heavy in those sectors in which domestic investment was relatively light, and vice-versa. By building infrastructure and agriculture, aid created the conditions for a rising volume of private industrial investment.

13) U.S. Capital assistance financed nearly three-quarters of Taiwan's net investment in infrastructure during 1951-1963, but only about one-eighth of its industrial investment. The range of opportunity for industrial investment in a government-to-government assistance program between two free enterprise economies was restricted. Infrastructure projects were typically too large to be undertaken by the CRC on its own initiative and called for a large component of foreign technology and capital equipment. Demand for infrastructure--particularly electricity--was very strong throughout the aid period, and investment in this sector had a large indirect multiplier effect.

14) Total net investment in Taiwan was about equally divided between the private and the public sectors, but private sector investment expanded to about two-thirds of the total during 1959-1963. This expansion reflected primarily the rising volume of private capital formation in small and medium-sized diversified industrial enterprises during the last half of the aid period.

TABLE XIII-2

U.S. Capital Assistance Obligations and Net Domestic Investment of Taiwan during
1951-1963 by Major Sectors (U.S. Dollar Equivalents)

<u>Sector</u>	<u>Net Domestic Investment</u>		<u>U.S. Capital Assistance</u>		<u>Per cent-U.S. Capital Assistance to Domestic Investment</u>
	<u>Amount (millions)</u>	<u>Per cent</u>	<u>Amount (millions)</u>	<u>Per Cent</u>	
Infrastructure	\$ 481	18.5	\$ 356	44.0	74.0
Agriculture	329	12.6	193	23.8	58.7
Human Resources	577	22.1	104	12.8	18.0
Industry	1,218	46.8	157	19.4	12.9
TOTALS	\$2,605	100.0	\$ 810	100.0	31.1
Public	\$1,253	48.0	\$ 649	80.1	51.7
Private	1,353	52.0	161	19.9	41.8
TOTALS	\$2,605	100.0	\$ 810	100.0	31.1

Source: See Tables in Appendix B

15) Four-fifths of U.S. capital assistance was invested in the public sector and only one-fifth in the private sector during 1951-1963 as a whole. The public sector was the dominant recipient of aid throughout the period because of its heavy emphasis on infrastructure--all of which was public--and the fact that large portions of the agricultural, industrial and human resource sectors also were operated by the Chinese government.

16) U.S. aid brought the private sector of Taiwan's economy to pre-eminence indirectly--by providing infrastructure and inducing the GRC to create a favorable climate for private investment. Unless the U.S. had actively used the leverage of aid indirectly to get policies that would expand private investment, the private sector would have languished. Aid might have "built socialism"--as its critics often contend--and Taiwan's growth would have been stunted by less efficient use of resources.

17) The total multiplier effects of aid invested in infrastructure and agriculture were higher than in other sectors. Although the direct multiplier--financial leverage--of aid funds allocated to particular infrastructure and agricultural projects was relatively low, the indirect multiplier--aid-induced investment in other projects--was relatively high. Hence the total multiplier effects were large. Available evidence does not permit of clear conclusions about multipliers in other sectors.

18) Investment in agriculture yielded high social returns. Agriculture had a low incremental capital/output ratio, and output doubled during 1951-1964, primarily because of improved technology, and despite small changes in land under cultivation or agricultural manpower.

TABLE XIII-3

JCRR ALLOCATION OF U.S. AID TO MAJOR CATEGORIES OF ACTIVITY - 1950-1964

As of November 30, 1965

<u>ACTIVITY</u>	NT\$		US\$	
	Amount (thousands)	Per Cent	Amount (thousands)	Per Cent
Crop Production	\$ 377,463	10.2	\$1,024	14.4
Livestock Production	252,902	6.9	349	4.9
Water Use and Control	1,205,202	32.7	2,552	35.9
Forestry and Soil Conservation	187,441	5.1	476	6.7
Rural Organization and Agricultural Extension	243,693	6.6	88	1.2
Economic Research and Agricultural Credit	347,541	9.4	11	.2
Fisheries	241,285	6.5	31	.4
Land Reform	25,812	.7	-	-
Rural Health	127,968	3.5	318	4.5
Agricultural Research and Education	89,942	2.4	731	10.3
Rural Electrification and Communication	53,163	1.4	-	-
Gov't Budget Support to Local Agricultural Program	242,946	6.6	1,027	14.5
Miscellaneous Projects (including Outlying Islands and Mountain Resources Development)	136,310	3.7	195	2.7
Administration	<u>159,082</u>	<u>4.3</u>	<u>305</u>	<u>4.3</u>
TOTAL	\$3,690,750	100.0	\$7,107	100.0

Source: JCRR

19) There was relative underinvestment in the infrastructure and agricultural sectors and relative overinvestment in the industrial and human resources sectors, given the total amount of investment. Utilization rates of infrastructure and agricultural facilities were higher during most of the aid period. Because of ignorance of other factor inputs than U.S. aid, and of future carryover effects, the long run social rates of return to investment in each sector could not be computed directly, and any judgment must be tentative.

20) Available evidence indicates full utilization of fixed assets in infrastructure and agriculture and lower utilization ratios in the industrial and human resource sectors. Throughout the aid period, the power, transport and communications facilities of Taiwan were fully loaded and often had shortages of supply. Agricultural assets were also run at close to capacity. On the other hand, utilization rates of many industrial plants were subnormal, and there were clear evidences of premature overbuilding of educational facilities.

21) The intersectoral allocation of U.S. capital assistance was probably close to the optimum. U.S. capital assistance supplied 74 per

cent of total domestic investment in infrastructure, and 59 per cent in agriculture, but only 18 per cent in human resources and 13 per cent in industry. Thus U.S. aid not only expanded the total amount of investment, but tended to pull it in the most productive directions.

22) A sound developmental strategy was the dominant reason for the high productivity of aid. This strategy embraced both direct government investment and government guidance of private investment through economic policies. It put emphasis on the strategic problems in the correct sequence--first monetary stabilization, then rapid increase in agricultural productivity, then provision of infrastructure which, in turn, supported the expansion of industry, largely by private investment.

Chapter XIV. Intrasectoral Allocation of Aid and Project Selection

- 1) The degree to which U.S. aid resulted in optimal allocations of resources among projects within each major economic sector of Taiwan is another criterion of its efficiency. Even with a perfect distribution of investment between sectors, there would remain a wide scope for error in intrasectoral choices.
- 2) Intrasectoral optimality was tested by analysis of a representative sample of U.S. aid projects. U.S. dollar capital projects, U.S. dollar technical assistance projects, and aid-generated local currency projects were included. The sample was stratified with respect to project size, industry, date of initiation, apparent multiplier effect, administrative complexity, and apparent degree of success or failure. The sample embraced roughly 15 per cent of the number of identifiable aid projects, and 25 per cent of the total of \$1,049 millions of project aid funds obligated during 1951-1963.
- 3) The microeconomic analysis aimed to measure the rationality of the process of project selection and, indirectly, the long run social rates of return to projects. The canvassing of alternatives, character of engineering and economic feasibility studies, cost-benefit analyses, investment criteria, multiplier effects, financial results, and intangible values of each project were observed.
- 4) In general, microeconomic analysis revealed significant gaps between actual and optimal investment allocations within each major economic sector. Within each sector, there were failures to assess alternative projects, deficiencies in the quality of pre-investment studies, and errors

in the investment criteria utilized, which jointly resulted in waste of aid funds. Although many faults originated in the GRC agencies that originated proposals, AID bore the primary responsibility for adequate analysis before committing funds to projects.

5) Three basic sources of error in selecting aid projects were lack of initial surveys of resource needs, want of an independent project appraisal capability within the aid Mission, and pressure to obliterate funds before the end of each fiscal year. If comprehensive surveys had been made early in the aid era of Taiwan's resources and needs in education, energy, transport, and other generic fields, they would have pointed to critical needs and given valuable guidance that was lacking most of the time. If the Mission had possessed the capability to make its own economic analyses of projects, many errors that arose from reliance upon the reports of engineers employed by the Chinese government (although financed by AID) would have been avoided. If the Mission had not been under pressure to commit available funds before the end of each fiscal year, more adequate pre-investment analyses would have been made.

6) Use of low concessional borrowing rates instead of higher market rates of loan funds in comparing alternative investments led to uneconomic choices of capital-intensive projects. Serious errors in computing the cost/benefit ratios of alternative projects arose from using the 6 per cent per annum U.S. loan rate as the cost of capital in an economy where the true market rate was 12 per cent or more per annum. In the electric generating industry, for example, several expensive hydro-electric plants were constructed with aid funds instead of more economic thermal-electric plants.

7) In evaluating the projects of public enterprises, taxes, duties, and subsidy elements in enterprise costs and revenues were often not excluded.

By incorrectly regarding the enterprise rather than the economy as the relevant accounting entity, distortions were introduced into investment decisions. For example, a thermal-electric project might be rejected because fuel costs to Taipower were high, without adjustment for the fact that these costs included high duties and taxes on imported oil.

8) Although AID erred in appraising some projects, it also performed the valuable negative function of deterring the GRC from making errors. Thus

AID declined to finance a nuclear reactor, a high-dam hydro-power facility and an integrated steel plant desired by the Chinese government because it correctly appraised them as uneconomic. Although its own project approvals were not optimal, the Mission's participation in the selection process undoubtedly raised the overall efficiency of investment.

9) Project selection in Taiwan probably would have been better if the Mission had performed a more active initiating and developmental role.

In practice, the Mission served primarily as a reviewing and monitoring agency for projects initiated by CIECD and the engineering consultants retained by it. Had the Mission played an active role, it is likely that more high-yielding projects would have been discovered and carried out.

10) Within the infrastructure sector there was over-investment in hydro-electric and under-investment in thermal-electric plants. If more of the \$245 millions of aid supplied to Taiwan Power Company had been allocated to thermal plants, which had relatively low capital costs per Kw of generating capacity and shorter gestation periods, the chronic shortages of electrical energy in the island could have been reduced and Taiwan's development

accelerated. A rational power program for Taiwan would have been to build thermal plants first to provide basic capacity, and hydro plants later for peaking capacity. The mistake was due to overemphasis on the merits of hydro-power, the desire to use low cost U.S. aid funds while available, an irrational desire to minimize use of foreign exchange to buy thermal fuels, under-pricing of capital costs, and over-pricing of fuel costs.

11) Within the infrastructure sector there was misallocation of much capital to the low-yielding Shihmen reservoir project and under-allocation to transportation and communications. Far more development would have occurred if the nearly \$70 millions of aid funds spent on the Shihmen dam and reservoir--the largest aid project--had been used to improve Taiwan's overloaded transportation and communication facilities. The causes of this error were similar to those underlying hydro-power investments. Lack of a transportation survey early in the aid period was a contributing factor.

12) The quality of pre-investment analysis of aid projects in the agricultural sector was not good. Although the average productivity of investment in this sector was relatively high, the pre-investment analysis and justification of most projects was deficient. Engineering feasibilities usually were established; but economic analyses of cost/benefit ratios and prospective investment returns were rare, except for irrigation projects.

13) Most aid to agriculture was allocated on a basis of local "felt needs" rather than according to a coordinated long range plan of rural development. Projects were initiated by local sponsoring agencies. Most resources went to the following categories of activities, in order of

magnitude: water resources and flood control, crop production, research and education, forestry and soil conservation, livestock production, rural health, fisheries, and farm credit.

14) More aid funds should have been allocated to research, extension activities, fishing, and less to flood control and irrigation. Aid investment in developing and propagating new agricultural technology paid off richly. Despite small increases in inputs of land and manpower, Taiwan's agricultural output doubled between 1951 and 1964, primarily because of aid-financed improvements in technology. Aid to the fishing industry was also extraordinarily productive. In contrast, flood control and irrigation projects could have obtained more local resources.

15) Concentration of agricultural assistance in fewer projects would have been more productive. More than 6,000 identifiable rural projects got aid funds, the majority less than \$25,000 each. Although political--and some economic--benefits came from scattering aid widely among people in the rural development effort, the economic values were more than offset by the inefficiencies of excessively small-scale projects.

16) Within the human resources sector there was over-investment in education and under-investment in health, industrial management, housing and urban development. In 1951 the people of Taiwan already possessed a good literacy ratio, an exceptional stock of administrative and professional talent, and a deep commitment to education. The GRC was generally resistant to basic changes in the educational system. From the standpoint of development, the productivity of U.S. aid to other human resources and institutions would have been higher and the large amount of aid to education should have been reduced.

17) Within education there was over-investment in higher education and buildings and under-investment in vocational and apprenticeship training. The persistent large surplus of university graduates in most fields was only partially relieved by a "brain drain" to the U.S. Meanwhile, there were chronic shortages of workers trained in the mechanical skills needed by an industrializing society. Taiwan's educational system was not well geared to the needs of development, and U.S. aid did little to change it. A comprehensive survey of manpower needs and resources early in the aid program might have mitigated this error.

18) No general conclusions were reached about the mixture of instruments used for transferring knowledge, skills and technology to Taiwan. The three instruments were sending Americans to Taiwan (technical assistance), sending Chinese abroad (participant training), and establishing institutions in Taiwan. The optimal "mix" depended upon the field of knowledge and the intellectual level of training. In general, programs were most effective in agriculture, industry, and infrastructure, and least so in education and public administration.

19) Within the industrial sector, most aided enterprises were economic investments because they were based upon Taiwan's agricultural or mineral resources or its low-cost labor. Capital-intensive "prestige" projects lacking a local resource base were generally avoided. Some mistakes were made, including aid to the aluminum industry, which employed relatively little labor and for which Taiwan possessed neither native bauxite, low-cost power, or cheap capital.

20) Allocation of aid to industry could have been improved by adoption of correct principles and rational processes of project selection.

A consistent application of the principle of comparative advantage would have ruled out such vague or erroneous justifications of industrial projects as "economic independence," "import substitution," "balanced growth," or "industrial diversification." Most pre-investment analyses of financial, marketing and economic aspects of projects were superficial, although engineering feasibilities were established.

21) Of all aid projects, those supporting private industrial investment earned the highest returns. The comparatively small commitment to the Capital Development Support Project of 1960-66, CDC, IDIC, and the Small Industry Loan program induced much private investment and had enormous multiplier effects.

22) Errors in the allocation of available U.S. aid probably reduced Taiwan's development about 10 per cent under the potential. Ideal distributions of available resources might have raised the average compound growth rate of GNP by about 10 per cent. Stated alternatively, optimal allocations might have enabled Taiwan to attain the same growth with about 10 per cent less U.S. assistance. Compared with economic aid programs to other countries, this probably was an excellent record.

23) A correct developmental strategy far outweighed accurate project selections in determining the efficiency of external aid. Despite some faulty choices of projects, well-conceived intersectoral allocations of resources and wise policies of the Chinese government to foster private investment produced superior results. The Taiwan experience teaches this

important lesson. However, rational choices of projects can also make an important difference.

Chapter XV. The Instrumental Structure and Level of Aid

1) Strictly, the U.S. did not have a foreign economic aid "program" for Taiwan, but a number of separate instruments of assistance, imperfectly coordinated. Each instrument was enacted by Congress at a particular time, for a particular purpose, and provided a specific kind of aid on its own financial terms. The primary element common to all instruments was the transfer of resources from the U.S. Government to a foreign government on concessional terms. The instruments were: Supporting Assistance (formerly Defense Support), Food for Peace (PL 480 surplus agricultural commodities), Direct Forces Support, Development Loans, Development Grants (formerly Technical Cooperation). The aid-generated local currency instruments were Military Budget Support and the civilian Local Currency Program.

2) The optimality of the instrumental structure of aid to Taiwan was judged by three criteria. Three aspects of the aid instruments were analyzed: their statutory purposes, the nature of the resource input into Taiwan they financed (i.e., aid imports), and their financial terms. The mixture of statutory instruments utilized was tested by the degree of congruence of Taiwan's economic requirements with Congressional purposes. The mixture of imports financed by aid was tested by the criterion of maximizing increases in the total amount of productive investment in the long run. The mixture of financial terms of aid was tested by the criterion of proportionate reduction in the concessional element per dollar of aid as Taiwan's financial strength improved. In applying all criteria, the goal of economic independence of Taiwan by mid-1965, including an adequate level of foreign exchange resources, was assumed to be a constraint on U.S. aid policy.

3) Only the macroeconomic effects of the several instruments of aid could be evaluated. AID did not maintain the detailed records that would enable one to trace the dollars supplied by each instrument to particular economic sectors or projects. Thus generalizations could not be derived about the inter- or intra-sectoral effects of each instrument.

4) There was a material overuse of Supporting Assistance and Direct Forces Support in Taiwan, with reference to their statutory objectives. Congress appropriated these funds to enable Taiwan to offset the military burden and not to produce development. Yet nearly two-thirds of all U.S. aid was funded by these instruments (\$906 millions of a total of \$1,449 millions), and they probably contributed about two-thirds of the estimated doubling of Taiwan's GNP growth rate. (See No-Aid Growth Model, Chapter XI). The military burden thus subtracted less growth than was added by the aid supplied under these instruments (See No-Military-Burden Growth Model, Chapter IX). The conclusion follows that there was a divergence between statutory purpose and economic effect, and development was in effect financed partly behind a facade of Defense Support.

5) There was a relative underuse of Development Loans and Development Grant Technical Assistance, judged by statutory purposes. A corollary of the preceding point is that a larger proportion of the total economic aid to Taiwan should have taken the form of Development Loans and Development Grant Technical Assistance. Development Loans should have been made available before 1959. Since AID financed virtually all capital projects that could have been executed efficiently up to 1962, development assistance was near a saturation level. Hence a reduction in the absolute amount of Supporting Assistance.

would have been necessary to make the instrumental mix conform to statutory purposes.

6) Within the total of U.S. aid, there was relative overuse of non-project and relative underuse of project assistance, judged by statutory purposes. Because project aid was near its practical maximum level, and Defense Support and Food for Peace were the only sources of financing non-project aid, the fault could have been corrected only by a reduction in the absolute amount of aid provided by the latter instruments.

7) Changes in the composition of aid-financed and GRC-financed commodity imports into Taiwan during 1951-65 indicate that they performed complementary functions. U.S. aid-financed imports complemented those financed with GRC resources. While Food for Peace financed only imports of U.S. surplus agricultural commodities, all other aid instruments formed, in effect, a common fund for financing all other imports, and particular aid instruments could not be associated with particular imports.

8) Imports financed by U.S. aid and those financed by the GRC were jointly and effectively coordinated in the interests of development. The composition of total imports during 1951-55 reflected the mutual AID - GRC purpose to attain social and economic stability, and during 1956-65 to foster rapid economic development. Imports of consumer goods were restricted by the GRC to about 3.5 per cent of private consumption during the aid period. Luxury imports were almost excluded. Large aid imports of consumer goods served mainly to release GRC exchange for industrial materials and capital goods, and the GRC spent 79 per cent of its own foreign exchange for these purposes.

9) The preponderant effect of aid commodity imports was to stimulate Taiwan's development and to hasten the date of its economic independence. Capital good imports added to domestic investment. Industrial material imports augmented local production. Consumer good imports helped curtail price inflation and released GRC resources for developmental purposes. The local currencies generated by most imports also raised the level of domestic capital formation. After 1962, aid imports also served to build up Chinese foreign exchange reserves to a level required for economic independence.

10) Aid commodity imports served to increase consumption modestly during the early years, but most of this increase had long run developmental effects. Given the drive of the Taiwanese people to recover prewar living standards and the fact that foreign exchange rather than domestic saving was the limiting factor on the island's development, the rapid increase in income per capita during 1951-58 did not retard and ultimately increased development. A rapid rise in consumption per capita was a condition of the rapid increases during 1958-65 of savings/income and investment/GNP ratios. However, the lift in consumption probably was somewhat faster than necessary.

11) Food for Peace had less developmental effect per dollar than did other instruments of aid. Although U.S. surplus agricultural commodities were useful imports and generated local currency funds for Taiwan's development, they were a restricted range of imports and will have long run deterrent effects upon Taiwan's own agricultural production.

12) Development Grants - Technical Cooperation probably had the highest average productivity per dollar of all aid instruments. This instrument brought about transfers of knowledge, skills and technology, for

which the multiplier effects were, on the average, very high, and for which no substitute was available to the Chinese government. However, the productivity of projects differed widely. Technical assistance related to or incorporated in specific capital projects appears to have been the most effective.

13) The Local Currency Program of development financed by aid-generated NT dollars materially raised both the level and the productivity of domestic investment in Taiwan. Because sponsors of local currency projects were commonly required to provide matching funds, much investment was made that would otherwise not have been made. The ready availability of local currency to complement U.S. dollar aid accelerated the execution of projects. Participation by the Mission in project selection increased the average social rate of return.

14) That part of aid-generated local currency used for Military Budget support had about the same developmental effects per dollar as did projects in the Local Currency Program. MBS had the effect of releasing Chinese resources for developmental purposes. It was a mixed military-economic instrument of aid to Free China that served a useful purpose, and illustrated the impracticality of a clean separation between military and economic aid.

15) The financial terms of aid to Taiwan were extremely generous. Nearly 83 per cent of all aid was an outright grant, of which one-quarter did not call for local currency generation. Practically all of the balance was in "soft" loans repayable in NT dollars. Only 6 per cent was in U.S. dollar repayable loans bearing $3\frac{1}{2}$ per cent interest.

16) Earlier gradual hardening of the financial terms of aid to Taiwan would have enhanced developmental results and eased the transition to economic independence. Actual financial terms were not smoothly adjusted to Free China's improving financial strength. If soft local currency-repayable loans had been introduced prior to 1956, soft U.S. dollar-repayable loans prior to 1963, and some hard U.S. dollar-repayable loans before aid was ended, investment projects would have been more carefully selected and the adjustment of Free China to self-financed development after 1965 would have been facilitated.

17) In retrospect, aid probably could have been reduced moderately, principally through less Food for Peace, without slowing Taiwan's development. A cut of about \$100 millions during the last five years of the aid period probably would have reduced the rise in consumption and in foreign exchange reserves moderately, without preventing Taiwan from attaining economic independence in 1965. With benefit of hindsight, the rise in GRC foreign exchange reserves, partly made possible by Food for Peace imports, was greater than necessary. There was a little leakage of non-project aid into unproductive consumption.

18) Optimal use of all instruments of aid combined with ideal allocations of development resources might have increased the efficiency of aid to Taiwan about 15 per cent. Moderately less total aid, allocated with optimum effectiveness (See Chapters XIII and XIV), probably could have given Taiwan the same development with about 15 per cent less money. Yet such perfection in human affairs is unattainable. There was probably a smaller percentage of waste in Taiwan's aid program than in any other U.S. foreign economic assistance program of comparable duration and magnitude.

Chapter XVI. Critique of Aid Administration

1) The productivity of aid to Taiwan may also be judged by the criterion of optimal administration. This requires a model of "ideal" policies for administering developmental aid to a country in a perfect world, an understanding of the extent to which reality differed from ideal conditions, and an assessment of the degree to which the policies used in Taiwan approached the practical optimum.

2) The basic components of a model aid administration are explicit goals and an effective system of administrative controls to attain them. The critical issues in setting goals include the target rate of economic growth, the amount of resources needed to attain it, and the target period of external aid to the date of economic independence, including necessary foreign exchange reserves. Primary features of the control system include development planning and programming, relation of aid to the national budget, the degree of projectizing aid, the method of controlling aid and non-aid imports, and the administration of aid-generated local currency as well as U.S. dollar projects.

3) Ideally, AID and the government of the recipient country should agree explicitly on the primary dimensions of an aid program at its inception. Amounts of annual aid obligations, adequacy of self-help, and annual progress could then be assessed against long-term targets. Corrective actions in annual aid programs would then be taken promptly to attain long-term targets, and the targets revised if necessary.

4) In practice, explicit targets were not fixed for aid to Taiwan until the last years of the aid period. Uncertainties concerning U.S. - GRC

relations in the early years, uncertainties regarding Congressional support of foreign economic aid programs, and the deficiencies of economic statistics inhibited an effective long-term planning of aid. A target level of foreign exchange reserves necessary for self-reliant growth apparently was never fixed. These omissions were a source of slippage in the efficiency of aid. Only about 1962 were definite growth targets aiming at a phase-out of aid established.

5) The basic, though implicit, determinant of the level of U.S. aid to Taiwan was the high economic growth rate planned by the Chinese government.

It was not, as is commonly held, the deficit in China's balance of payments. Although AID justified to Congress an annual level of aid that would approximately erase the deficit in the GRC balance of payments, these deficits appear to have been predicated upon a volume of investment sufficient to generate the average annual growth of 7.2 per cent in GNP projected in the three Four Year Plans. The real deficit financed by U.S. aid thus was an "investment program deficit."

6) The period of aid implicitly accepted by AID was the minimum time Taiwan required to attain economic independence. Because the high level of aid nearly saturated Taiwan's capacity to absorb investment, it implied a minimization of the time required to attain self-sustaining growth.

7) The alternative target of less rapid growth of Taiwan with less U.S. aid was not explicitly considered by AID. While a recipient country will ordinarily seek to minimize the time required to attain economic independence irrespective of the cost, a donor country may rationally seek to minimize the (present value of) aid outlays required to produce

self-sustaining development, whatever the time required. The latter criterion may well lead to a "light" aid program producing slower growth and requiring more time to reach the goal.

8) Taiwan probably would have been able to maintain an average annual increase of 2 per cent in per capita GNP and to attain economic independence in 1971 with 17 per cent less aid. Construction of "Light" Aid Growth Models led to a conclusion that average annual aid of \$59 million instead of \$83 million (in discounted value at 1951) would have lengthened the time-period to economic independence by only six years and reduced the cost to the U.S. by about \$156 millions. The trade gap was the determining factor in Taiwan's economic growth. Whether Taiwan's faster actual growth was worth its cost was a policy issue that should have been decided by the U.S. National Security Council in the light of alternative methods of strengthening U.S. security. However, the "heavy" aid decision was probably wise.

9) Ideally, AID and the recipient government should agree in advance on the strategy of development and necessary resource inputs, and should finance assistance through the latter's national budget. In a perfect world, complete agreement between the U.S. and government of the aided country would lead to an optimal strategy of development, carried out through optimal annual investment allocations, and financed by agreed amounts of local resources and external aid. AID would then write checks to the recipient government for the U.S. dollars necessary to carry out the programs, which would become a part of its national budget receipts to be administered by its regular ministries.

TABLE XV-1

Actual and Probable Growth Rates of Taiwan's Economy
Under Various Hypothetical Conditions, 1951-1965

<u>Conditions</u>	Average Probable Annual Compound Rate of Growth of the GNP, 1951-1965
1) Hypothetical - Heavy Aid and No Military Burden	9.7
2) <u>Actual - Heavy Aid and Military Burden</u>	<u>7.6</u>
3) Hypothetical - Light Aid and Military Burden	5.2
4) Hypothetical - No Aid and No Military Burden	5.2
5) Hypothetical - No Aid and Military Burden	3.8

Source: Various hypothetical growth models in Appendices

10) In practice AID administrative controls and special GRC aid institutions were needed to increase the efficiency of use of aid. AID controls and institutions like CIECD and JCRR enhanced the productivity of both domestic resources and U.S. aid and were worth far more than their costs. The apparatus of aid administration in Taiwan increased total developmental outlays, prevented many investment errors, transferred more knowledge, skills and technology to the economy, and increased the technical competence of investment decisions. Because there was never complete agreement between AID and the GRC on developmental strategy or project selections, controls of aid were desirable, and aid was not "over-administered."

11) AID participated with the GRC in effective controls of imports, U.S. dollar aid projects, and aid-generated local currency projects. Generally speaking, GRC funds for development and U.S. aid were treated as a fungible pool of resources, and only about 10 per cent of public investment was financed outside this system of control. There was a minimum of perverse "resource substitution" by the GRC, that is, use of its own resources to finance imports or projects disapproved by AID. As a result, both project and non-project aid generally was well controlled in the interests of development. A major issue was the annual amount of Military Budget Support from aid-generated local currency.

12) U.S. aid to Taiwan was "projectized" close to the optimal level. The effective constraint upon the aggregate volume of aid projects was the available supply of technical, professional, administrative and entrepreneurial personnel, and this supply was fully employed during the aid period.

An effort to push a larger volume of projects would have sharply reduced the yield of investment.

13) Joint AID-GRC administration of the Local Currency Program made a large contribution to Taiwan's growth. The requirement of payment by the Chinese Government for most U.S. aid imports in local currency, and the use of 64 per cent of these funds for development, raised the level of capital formation significantly. AID participation in the administration of this Program lifted its average productivity by improving project selections.

14) Although there were drawbacks in extra-budgetary administration of aid, the net benefits of the arrangement in Taiwan were considerable. Because aid-generated local currency funds were not part of the GRC budget, CIECD and JCRR could operate without the bureaucratic delays and constraints that inhibited the regular ministries of the GRC. They could pay adequate salaries to attract competent personnel. On the other hand, AID contacts with regular GRC ministries were reduced, and expertise in development programming and administration was not widely developed throughout the GRC. Hopefully, this deficiency will be rectified during the 1965-70 post-aid transition period.

15) A well-conceived system of administration contributed to the high efficiency of U.S. aid to Taiwan. Given the realities of inter-governmental relations and the practical difficulties of executing a large and complex joint developmental enterprise, the actual administration of aid came close to the optimum.

Chapter XVII. The Termination of Aid: Taiwan in 1965

1) Determining when to end aid to a developing country is as important a policy decision as deciding when the conditions exist for commencing aid. To extend the period of aid unduly is to create disincentives to self-help measures; to end it too soon is to risk loss of forward momentum. The criteria for terminating aid are prospectively adequate levels of domestic saving and investment, growing competitive strength in international trade, an inflow of foreign private investment, access to international investing institutions, and adequate reserves of gold or convertible foreign currencies. Because the phasing-out process requires several years, it must be planned in advance.

2) Initial preparations for ending U.S. aid to Taiwan began in 1960, with agreement by the GRC on a 19-Point Program of Economic and Financial Reform. Although termination of aid had been a long-held objective, this was the first specific step toward it. Thereafter, the primary effort of AID was to foster private foreign investment and to build up Free China's international credit standing. A termination date was not fixed at that time.

3) During 1962 the China aid Mission came under new direction, and developed firm plans to end concessional assistance at the earliest feasible date. The Mission was reorganized to focus its full energies on private enterprise development and export stimulation. Maximum pressure was put on the Chinese government to join in this endeavor--and full assistance was given.

4) Early in 1963 the aid Mission constructed a macroeconomic model of the Taiwan economy indicating probable rapid growth during 1965-72 without aid commitments beyond 1968. Based on historically conservative assumptions about the country's prospective marginal propensity to save, marginal capital/output ratio, growth of exports, population, labor productivity and government consumption, it was concluded that Taiwan's GNP could grow between 6.3 and 7.2 per cent a year during 1965-72 without further aid obligations. This study rationalized the U.S. determination to end assistance by 1968: but no public announcement was made.

5) In the fall of 1963 the Mission revised its projections of the Taiwan economy, and concluded that aid could be ended by June 30, 1966. Favorable economic developments supported an acceleration of the termination date by two years.

6) The unexpectedly rapid rise of Taiwan's exports and foreign exchange reserves during 1963-64 led to a public announcement in May 1964 to terminate aid by mid-1965. Expansionary forces proved so much stronger than had been predicted that the aid termination date was again accelerated. Instead of deficits, Taiwan had net export surpluses during 1963 and 1964. Its gold and net foreign exchange reserves reached a more than adequate level of almost \$300 millions by mid-1965.

7) Announcement of the decision to terminate U.S. aid was well timed. Although not without risk, the probability was high that Taiwan would be able to meet the criteria of economic independence and to make its way without U.S. concessional assistance after 1965. Whereas aid formed 13 per cent of the island's GNP in 1951, it was little more than 2 per cent of a vastly enlarged GNP in 1965.

8) The announcement effects of the termination decision upon the GRC were constructive. The GRC was stimulated by the announcement further to improve the climate for private investment, to promote exports, to mobilize its own resources for development, and to seek capital and credit from private investors and international institutions. Its efforts to attract capital and trade from Japan and other countries were redoubled.

9) U.S. aid in the pipeline and local currency balances at mid-1965 promised to ease the transition to economic independence. Arrivals of previously-committed U.S. dollar aid were scheduled at about the 1965 level for two more years. Also, the U.S. agreed to continue to make some surplus agricultural commodities available on concessional terms. (See 9a - p. 82)

10) In April 1965 AID and the GRC agreed to establish a Sino-American Fund for Economic and Social Development and to provide for the administration of the Local Currency Program during 1965-70. The Fund was to have a Managing Committee of top GRC fiscal and monetary officials with annual appropriations to be administered by CIECD. It was to finance development projects, approved by CIECD and by the JCRR in the rural areas, from available local currency totalling \$40-50 million a year. Projects were to emphasize research and innovation, to conform to developmental criteria, and to meet technical and economic feasibility tests. Developmental activities were to be gradually transferred to the regular ministries of the GRC.

11) In the opinion of ECAFE, and according to GRC targets, Taiwan is capable of maintaining a 7 per cent annual growth of GNP during 1965-1974. During 1965 ECAFE published a report projecting a growth of 6 to 7 per cent a year for Taiwan up to 1980--the highest in East Asia. CIECD also

constructed a macroeconomic growth model for Taiwan during 1965-74 in which an increase of 7 per cent a year in GNP was made the target. The model showed that this goal could be achieved with plausible values for the principal variables.

9a) The transition was also eased by rising technical and capital assistance from the United Nations and other institutions. The U.S. used its good offices to help the GRC enlarge technical assistance programs of the UN in Taiwan, and to negotiate loans from the World Bank, Export-Import Bank, and other sources. Foreign aid to Taiwan was not terminated in a broad sense; its sources were broadened to include other agencies than the U.S. government.

12) It was highly probable that the inflow of private investment into Taiwan would continue to rise rapidly after 1965. The annual amount of foreign private investments approved by the GRC increased prior to 1965. A stable government, relaxation of government controls of enterprises, favorable tax policies, duty-free industrial processing zones, efficient low-cost labor, and central location in the Western Pacific basin combined to make Taiwan relatively attractive as a situs for manufacturing industries. Rapidly rising wages and other costs in Japan and Hong Kong gave Taiwan increasing competitive advantage.

13) Free China faced difficult but not insoluble socio-economic problems in 1965. They included relaxation of government controls of international trade and payments, establishing instruments and policies for effective regulation of money and credit by the central bank, developing an efficient market for private capital, transferring public industrial enterprises to private ownership, modernizing industrial relations policies and employment markets, eliminating protection of "infant enterprises" as they matured, and establishing institutions for home mortgage and consumer credit.

14) A liberal Free World system of trade and payments is essential to Taiwan's future progress. Free China was able to gain its economic independence by 1965 only because the rest of the world was willing to buy its exports. Taiwan's trade-limited economy can prosper without aid in the

future only if Free World nations continue to avoid economic autarchy and expand opportunities for international trade. For Taiwan the choice between trade and aid is inexorable. Given opportunities to export, Taiwan's growth potential is large.

15) GRC encouragement of international trade, private enterprise, and economic investment are also prerequisites to Taiwan's future progress.

A nation seeking exports must welcome imports. Maximum efforts should be made by the GRC further to improve the climate for private investors, domestic and foreign, and to foster the light labor-intensive industries in which Taiwan's comparative advantages are greatest. Resources should not be wasted on premature integrated steel mills, nuclear power plants, international airlines, or other uneconomic "status symbols."

16) The United States can play a valuable role in Taiwan's development during the post-aid period. The mutual interests of the U.S. and the GRC would be served by a scheduled elimination of all formal and informal U.S. quotas on Taiwan's exports over a five-year period--giving meaning to the slogan "trade--not aid." The U.S. should refrain from deterring private investment in Taiwan, and seek other solutions to its balance of payments problem. It should strongly support GRC applications to international financial institutions for funds to finance meritorious projects. It should willingly respond to GRC requests for advice and assistance on monetary, fiscal and other economic policies. Finally, U.S. support of a regional East Asian Economic Community, to be composed initially of those countries of the region having common problems of trade and development, is worthy of exploration.

17) Given wise domestic policies, peace, and a world environment favorable to trade, Taiwan could within 15 years achieve the per capita income of an advanced economy today. Maintenance of a compound growth rate of 4.25 per cent a year would raise Taiwan's income per head from about \$160 in 1965 to about \$300 per capita by 1980. This would thrust Free China into the ranks of the economically-advanced nations.

ERRATA - This revision should be substituted for page 85 of the text.

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Chapter XVIII. Lessons for U.S. Foreign Economic Aid Policy

1) Taiwan's transformation from deep economic dependence in 1951 to self-sufficiency in 1965 depended upon a combination of six strategic development factors. They were: (a) the native talents and industry of the Taiwanese people, (b) the infrastructure and human resource foundations laid by Japan, (c) the professional and administrative abilities and drives brought by the Mainland Chinese immigrants, (d) stable government, (e) economic policies favorable to private enterprise, and (f) U.S. aid which contributed to (d) and (e). Taiwan's natural resources were limited, and were not a strategic factor in its development.

2) Want of any strategic developmental factor probably would have prevented Taiwan from growing rapidly, whatever the amount of external aid. Literacy and adaptability of the people had first to be gained, political stability established, administrative leadership supplied, and constructive economic policies evolved, before Taiwan's rapid progress into industrial diversification could occur. Before these factors came into being, Taiwan's economic progress was not rapid. One may infer that Taiwan's performance with U.S. aid could only be repeated in a country possessing in good measure all of the strategic developmental factors. Because many countries lack one or more of these, their expected growth rate will be slow or moderate.

In asserting that a number of developmental factors must be present before rapid and sustained economic growth can occur, it is not implied that a set of "preconditions" must be met before any growth takes place. It is impossible to specify a rigid set of "preconditions" of development, as Hirschman and Gerschenkron have pointed out. Most economies grow under a

great variety of external conditions and internal structures. Some even experience short bursts of development in the face of political or monetary instability, widespread illiteracy, or shortages of technical and entrepreneurial talent. Nevertheless, both a priori theory and historical observation strongly suggest that a fast pace of development cannot be maintained over an extended period of time unless there is stable government, a minimum degree of monetary and fiscal discipline, a literate adaptable economically-oriented population, entrepreneurial and technical leadership, and an adequate supply of capital. The science and art of foreign economic aid to semi-developed countries consists in identifying the on-coming bottlenecks to sustained and rapid growth, and concentrating assistance upon ways and means of removing them, one by one, as they appear. This is a materially different concept and process than "establishing preconditions," or supplying the "missing component" or the "catalyst" to growth.

3) Premature efforts to industrialize less developed countries have been a source of waste of U.S. economic aid. In some other countries U.S. funds, and domestic resources as well, were wasted in efforts to industrialize before the foundational conditions had been met, including the modernization of the country's agriculture. Too often AID committed the common error of confusing development with industrialization; but this error was avoided in Taiwan.

4) The lessons of Taiwan's experience with external aid are applicable to both semi-developed and undeveloped countries. Efficient economic assistance programs for traditional societies, such as those found in many African countries, will differ radically in design from programs applicable to the semi-developed economies of most Asian and Latin American countries. The former should be most concerned with creating the strategic factors of development; the latter with rapid transformation of the country into diversified economic activity.

5) The U.S. economic aid program for Taiwan had characteristics which would be productive if applied to other semi-developed economies. Its strong features were:

a) Both AID and the GRC increasingly focussed upon development as the major policy objective during the last half of the aid period. Both U.S. aid and local resources were used for development rather than for relief, social welfare, spreading employment, political influence or other aims.

b) AID and the GRC generally agreed upon a productive strategy of development. This stressed, in turn, monetary stability, agricultural production, infrastructure building, and, finally, industrial growth.

c) The joint GRC-AID policy was to provide strong incentives to produce, and improved technology to raise efficiency and incomes. Larger domestic savings were not forced by high taxation or inflation, for fear of diminishing incentives. The expansion of savings and investment was properly considered to be a consequence, rather than a cause, of development.

d) The joint GRC-U.S. policy was to avoid detailed mandatory central planning of development. Market forces were utilized to the maximum

extent in guiding investment decisions, which reduced errors and raised the average productivity of investment. Comparative economic advantage, rather than arbitrary ideas about "balanced" development, was the criterion generally used for allocating scarce capital.

e) The U.S. provided a high level of aid, which saturated Taiwan's absorptive capacity and gave the U.S. "leverage" upon Chinese economic policies.

f) The U.S. used aid as a lever to foster economic policies favorable to development--it followed an activist rather than a passivist policy, and wisely rejected the fallacious view that aid should have "no strings".

g) AID and the GRC conducted a prolonged and generally fruitful dialogue on economic policies--which are as important as the amount of aid in determining the rate of development.

h) The U.S. refrained from using aid as an instrument to bring about political reform, thus maintaining the stability of an authoritarian government, and letting democracy come later. A major effect of aid was to contribute to political stability.

i) U.S. focussed upon private enterprise development--both indirectly through influence on economic policy, and directly through allocation of aid funds. It did not "build socialism" in Free China.

j) The predominant part of U.S. aid went into infrastructure and human resource development--the proper domain of government, leaving a fairly open field for private enterprise in agriculture and industry, where it is generally more efficient.

k) The U.S. persuaded the Chinese government to develop labor intensive industries rather than capital intensive "monuments" such as integrated steel plants. Free China's abundant labor and its scarce capital were thus utilized quite efficiently.

l) The U.S. and the GRC coordinated the use of aid through import controls, U.S. dollar project controls, and control of local currency usage. It did not simply write the Chinese government a check and walk away.

6) Mistakes were made in the Taiwan aid program from which lessons can be learned for application to aid programs in other countries.

a) During most of the aid period, assistance was provided on an ad hoc year-to-year basis. Explicit targets for development aid for the amount and period of U.S. aid were not fixed in the light of alternatives.

b) Different instruments of aid were imperfectly coordinated during most of the aid period.

c) The true military burden on Taiwan's economy was not measured. Assuming that Defense Support and Food for Peace were intended to support the military burden they were overallocated.

d) Surveys of Taiwan's resources and needs in manpower, energy, education and other generic fields were either not made or made too late. If guidelines to the selection of projects had been made early in the program they would have increased the effectiveness of aid.

e) The Mission lacked capabilities for making independent appraisals of projects. The economic analysis of many projects was deficient.

f) The Congressional requirement to commit funds before the end of each fiscal year led to hasty and premature approvals of projects.

g) Inappropriate investment criteria led to inefficient use of funds in some capital-intensive projects. The quality of cost/benefit analysis of many projects was poor. AID loan rates rather than market rates of interest were used in comparing costs of alternative projects.

h) The political and social effects of aid were not systematically studied. Thus AID lacked valuable guidance to the design of the economic aid program for Taiwan. Similarly, AID lacked historical perspective.

i) AID failed to provide enough high-level counsel to the GRC on the fiscal and monetary policy problems of Free China.

j) Intrasectoral allocations of aid and project selections were far from optimal. However, the overall efficiency of aid was high because of a well-conceived developmental strategy.

k) The financial terms of aid were not progressively hardened as Taiwan's financial strength improved. Soft loans should have replaced grants at an earlier date.

l) AID gave questionable advice to the GRC on a number of economic policy issues. This included interest rates, stimulation of savings, progressive income taxation and limitations on money supply.

7) The overall efficiency of U.S. foreign economic aid expenditures could be increased substantially by a general application of the lessons taught by the Taiwan experience. Based on the findings of this study and the fact that the Taiwan aid program was one of the most productive in the world in the view of AID officials, this is a conservative statement. Although hindsight endows the critic with 20-20 vision and perfection is not to be expected in a world of imperfect men, application to the assistance programs of other countries of the lessons that may be distilled from the successes and mistakes made in Taiwan could produce a substantial margin of saving for U.S.

taxpayers and of welfare for peoples of the developing countries.

8) Despite some flaws, the overall effect of the aid program in Taiwan was successful. The Taiwan experience demonstrates that, given the necessary conditions, foreign assistance can successfully assist a country to develop economically.