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STUDIES ON FISCAL AND MONETARY PROBLEMS

Edited by

Swadcsh R. Bose

THE **PAKISTAN** INSTITUTE OF DEVELOPMENT ECONOMICS

Swadesh R. Bose

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STUDIES ON
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Introduction to the Series

The Pakistan Institute of Development Economics has compiled a series of *Readings* on various aspects of the development problems of Pakistan. These *Readings* consist of important studies relevant to the subject-matter to which the different volumes in this series pertain. It is hoped that the studies presented in these volumes will go a long way to fill in the lacunae in the field of economic literature for Pakistan.

All of the studies included in this volume were originally published in the Institute's quarterly journal, *The Pakistan Development Review*. The Institute has now been in existence for over a decade and *The Pakistan Development Review* is in the ninth year of its publication. During this period, the Institute has made very significant contribution in various fields of applied economic research. The studies carried out at the Institute have been of immense value to the planners, researchers and academics. Most of these studies were published in one form or the other in *The Pakistan Development Review* which is widely recognized, both in Pakistan and abroad, as one of the outstanding journals in the field of Development Economics.

In recent times we have been receiving suggestions from outside and have been increasingly becoming aware ourselves of the desirability of compiling in a number of volumes the significant contributions of the Institute in particular areas of research in development economics. We have come to recognize that this would be of significant use not only to those planners and researchers who would like to have important pieces of analyses in any particular area to be collected in a single volume, but also to the teachers and students at the advanced levels at the universities who have been handicapped in the teaching of courses in economics of Pakistan because of the lack of analytical and empirically oriented studies. It is in the hope of fulfilling these needs that we have embarked on the project of compiling books of readings selected from the studies published by the Institute.

It may be noted that we have confined ourselves to the studies actually undertaken by the members of the research staff at the Institute. *The Pakistan Development Review* regularly attracts contributions from eminent economists outside the Institute, both national and international. Many of these contributions are highly competent and relevant. But we have found it useful to confine ourselves to the studies carried out *at the Institute* because one of our purposes is to highlight the contribution of the Institute in specific areas of applied economic research.

Nurul Islam
Director
Pakistan Institute of Development Economics

STUDIES ON FISCAL AND MONETARY PROBLEMS

Introduction

Swadesh R. Bose

This volume is a collection of studies on fiscal and monetary problems in Pakistan, published in *The Pakistan Development Review* over the last few years. These studies were done at the Institute in the first half of the 1960's. But their relevance and importance for Pakistan's fiscal- and monetary-policy problems in relation to economic development has hardly diminished.

I

Fiscal policy has a vital role to play in developing countries. For a number of reasons, especially the low ratio of saving to national income, the state is required to play an active role in promoting economic development. The system of planning for development in countries such as Pakistan operates mainly through the price mechanism although direct controls are used in certain fields. In view of the inefficiency of increasing direct controls, the government has to rely on indirect methods of overall controls mainly through fiscal policy and, less importantly, through monetary measures. When extensive direct controls do not operate, fiscal policy is the most powerful instrument which can be used by the government to promote economic development.

In addition to influencing allocation of resources, fiscal policy assumes importance for the need to raise the rate of domestic saving. Achievement of a high ratio of savings to national income by keeping down the consumption of the bulk of the population by an income ^distributive method, *i.e.*, by low wages and great incomc inequalities, may not be politically feasible. In our times, people may not tolerate a high degree of inequality of income

and concentration of wealth which may be considered necessary for development relying mainly on private enterprise. There may be persistent pressure for higher wages which is difficult to resist so long as income and consumption disparity is enormous and the rich are allowed to indulge in conspicuous consumption. As a way out of this dilemma, a policy of large investment under public ownership along with private investment seems to be a political imperative. Taxation can be used to generate public savings and to raise the overall saving ratio without impairing private investment. In this way, the sacrifices involved in capital formation can be more equitably distributed and hence made more tolerable to the poorer sections of society. If rapid economic development and reduction of income inequality arc taken as currently accepted social goals, the main objectives of fiscal policy should be to raise the rate of investment by restraining consumption, influence the flow of resources into socially desirable channels and reduce inequality of incomes and wealth. The basic problem then appears to be to design a structure of taxation that will be conducive to the attainment of these (or any other) objectives which are ultimately related to the accepted social goals.

A considerable volume of literature on the problems of fiscal policy in developing countries has appeared during the post-war years. But extensive research on the problems of fiscal policy and taxation in the context of Pakistan's economic development has not been done. The studies included in this collection, although not covering a wide range of fiscal-policy problems, have contributed significantly to Pakistan's economic literature in this field. The concern of these studies is with taxation and not with expenditure. This collection could be more comprehensive with some studies on public expenditure and budgetary policy. This does not, however, reduce the value of this collection because, as mentioned earlier, the question of an appropriate tax structure has a certain pre-eminence among fiscal problems

Chowdhury's (1963) paper reviews the structure of central taxes and their share in Pakistan's national income for the period 1948-62 and offers suggestions for mobilizing more public savings through increasing tax revenues — direct and indirect taxes including agricultural taxation.

Chowdhury's (1962) paper examines the efficacy of the tax revenue estimating procedure in Pakistan 011 the basis of data for the period 1948-58. Reliable estimates of potentially available resources are of great importance in economic-development planning since the size and nature of die plan have to depend on resources availability. Because of the large size 01 the public-sector investment in the total development outlay, a reasonably accurate estimate of the financial position and prospects of the government is necessary.

This paper also examines flexibility of Pakistan's tax system in the 1950's and offers suggestions for increasing the flexibility. Flexibility is an important criterion of an efficient tax system. It serves as a built-in stabilizer in the economy and can contribute in the mobilization of public savings in a developing economy since it ensures that as national income increases tax revenue increases more than proportionately. The need for increasing flexibility is all the more important at present when the country is witnessing a remarkable increase in agricultural income in West Pakistan, because agricultural income still remains outside the coverage of central income tax in spite of the recommendations of Pakistan Taxation Enquiry Committee of 1960. Introduction of some direct taxation on the agricultural sector and making indirect taxation more progressive would be required for improving flexibility. The issues raised in the paper remain important for future development policy.

Lewis' (1964) paper raises many issues which, although controversial, are relevant and important even to this day. He argues that the emphasis on the share of tax in GNP as an indicator of efforts for resource mobilization is a narrow view of the fiscal problem and ignores the Central problems of fiscal policy in relation to economic development. The effects of the rate and structure of taxation go far beyond the amount of revenue raised. For example, the structure of taxes directly affects the rate of private domestic saving. Also domestic saving and investment are dependent upon the method by which imports are allocated — tariffs versus quotas and licensing, for example. The level of exports also depends on the rate and structure of domestic taxation. In sum, the rates and allocation of domestic saving and investment are dependent on the tax and fiscal system not only in a direct way through its effects on the post-tax income distribution but also in an indirect way through its effects on the level of exports and the level and composition of imports. He argues that it is necessary to take these important interrelationships into account for a proper evaluation of fiscal-policy alternatives. Otherwise, a certain policy measure, while fulfilling one particular objective, may create distortions in other respects through its effects on other important variables.

This paper also contains certain specific suggestions for rationalization of the fiscal policy. It takes the issue of corporation income tax which has been the centre of much controversy in Pakistan. It suggests the rationalization of the import-licensing system and a simultaneous reduction of the corporate profit-tax rate. The import-licensing system with an overvalued exchange rate provides very large profits based on privilege, and then high rates of tax are applied to these profits. But, it is argued, if the price of imports were raised by a substantial increase in import duties on all items or by devaluation and dismantling the direct control regime, the high profit

based oil privileged position would disappear. If at the same time the corporate-tax rate were reduced, this would provide the right type of incentive to the corporate sector without reducing in any way domestic saving and investment.

Lewis' (1965) paper examines certain aspects of fiscal policy along with general economic policy during Pakistan's second- and third-five-year-plan periods. The concern is with taxation and not with expenditure. It analyses the taxation measures of the plan period and evaluates them in relation to the changes in the overall savings rates, tax ratio, import and export ratio. It also analyses the adequacy of the proposed fiscal-policy measures for the third-plan period for achieving the domestic savings and other targets set in the plan. The analysis is instructive for future planning exercises.

This collection contains three papers on indirect taxes which are important tools of differential government policy, such as encouraging or discouraging use of particular types of resources and influencing allocation of investment resources by the private sector. In the presence of direct controls, the determination of the incidence of indirect taxes is, however, very difficult, and none of the papers investigates into tax incidence.

Lewis-Qureshi paper analyses some of the major characteristics of indirect tax revenue in Pakistan by type of tax and by type of economic flow that is taxed, and brings out the major structural changes in tax revenue from various industrial commodity groups and change in revenue structure by commodities classified by end-use.

Radhu's (1964.) paper is a companion piece to Lewis-Qureshi paper. Apart from the description and analysis of the rate structure of indirect taxes, the paper considers the differential incentives provided by indirect taxes, and their impact on the allocation of resources and pattern of investment. These are important issues for the future as well. Radhu's (1965) paper further extends the analysis of the other two papers on indirect taxes, and tries to determine the relationship between changes in tax rate and changes in prices. Since indirect taxes have been and are going to be important in Pakistan's tax structure, this question will remain important in Pakistan's development planning in the years to come.

II

in developed economies, monetary policy generally means the use by the central bank of open-market operations in securities, changes in the bank rate, and in the required cash- or liquidity-reserve ratios of the com-

mercial banks. The objective of such monetary policy is to affect the level of employment and prices in the desired direction. It is usually recognized, however, that such monetary policy is largely irrelevant to an underdeveloped economy such as Pakistan's because these traditional monetary-policy tools are powerless to reverse the basic causes of short-run fluctuations of output or prices in such an economy. The problem is not that such monetary policy cannot be made effective, but that it requires very drastic use of the policy tools leading to numerous other unacceptable and unavoidable consequences to the economy.

I think that the principal objective of monetary policy in developing countries is, or at least should be, to assist the long-run development of the economy. Policies concerning money and credit, including measures for promotion of growth of financial intermediaries, can affect Pakistan's economic development process in many ways. Without going into any discussion of the role of money and finance in economic development, two issues may be specifically mentioned partly because of their greater importance in policy debates in recent years: one is the question of the adequate supply of money as the economy grows and the other is that of an optimal distribution of credit among firms and among regions. The issue of an adequate money supply has been recognized for a long time and considerable discussion has taken place on the subject particularly since the launching of the First Five-Year Plan of Pakistan. Since the publication of the Pakistan Credit Enquiry Commission Report, the gross inequality in the distribution of credit in favour of the big borrowers has been a matter of public concern. In more recent years another dimension has been very forcefully added to the problem by the concern about interwing equity and the need for greater and easier availability of credit in East Pakistan.

The articles on monetary problems included in this volume cover such areas as the effectiveness of the monetary-policy tools in the Pakistan economy, the problems of planning money-supply expansion consistent with price stability and the limitations of traditional monetary measures in correcting inflationary pressures in a developing but still predominantly agrarian economy.

For the first time in Pakistan, the Bank rate was raised from 3 per cent to 4 per cent in January 1959 (later again to 5 per cent in June 1965). Chapra's paper examines how far this first bank-rate change was effective in bringing about the desired results. He finds that the expansion of bank credit to the private sector declined following the rise in the bank rate but this was more than offset by the increase in bank credit to the government sector. This was because the State Bank had to accommodate the financial needs of the government, and secondly the bank rate was not raised high

enough for fear of heavily depressing the prices of government securities. He concludes, therefore, that the bank rate may be effective if the price of government securities is allowed to fall sufficiently and new issues of government securities offer a high enough rate of interest to make them attractive to scheduled banks. But if the rate of interest is raised on government securities, the interest burden of new public debt will rise. This may be an important consideration by monetary authorities against using the bank-rate weapon very drastically along with open-market operations.

Porter's paper on 'Income Velocity' tries to appraise the usefulness of the income-velocity concept or the quantity theory of money as a tool in planning expansion of money supply consistent with price stability in a developing economy. He recognizes that the quantity theory is applied for financial planning in Pakistan not because of its efficiency but for want of anything better such as the Keynesian gap analysis which is not feasible due to lack of necessary data. His analysis concludes that the use of the quantity theory in planning to avoid inflation "is unnecessary, uncertain and misleading". While his statistical estimates relating movements in real-money balances with those in real income gave good fits, he argues that their use for prediction purposes is fraught with grave uncertainties. He maintains that in Pakistan the supply of money adjusts, at least partially, to its demand which may mean that price levels are not determined by the demand for money but the reverse. Therefore, it is dangerous to use the quantity theory which is based on the assumption of an exogenous money supply and an endogenous price level. He suggests that the need to use velocity concepts for stabilizing the price level can be successfully avoided through a new approach. If stock of foodstuffs can be built up and varying quantities of these are released timely the pressures on cereal prices may be avoided, and consequently the price level would be reasonably stable. In sum, in the context of the 1960's, he considers money supply as a not-very-important endogenous variable and the PL-480 food stockpiles as the primary defence against inflation. These ideas may not be readily acceptable to many but they are likely to raise questions in all readers about the efficacy of purely monetary measures to fight inflation even to-day.

Porter's food-stockpile idea is further developed in his 1962 paper on inflationary implications. Traditional economic theory asserts that while a crop failure and a consequent rise in cereal prices may lead to a rise in the general price level, if food output is a large proportion of the total, once food production attains its former level, other factors remaining unchanged, prices will fall to their previous levels. Porter argues that a bad crop in a particular year may cause irreversible changes in these "other factors" and hence may cause a permanent rise in the general price level. Some of these

relationships, discussed in the paper, are mere hypotheses not tested empirically. But in regard to practical policy, the conclusions of his analysis are clear enough. Stabilization of food prices is certainly a necessary condition for price stability, and very probably a sufficient condition as well. Adequate stocks and stable expanding sources of supply of food stuffs are essential "if Pakistan's development is not to be periodically marred by serious rises in prices'.

Id his 1961 paper on the dangers of monetary policy, Porter again argues that an once-and-for-all event — such as a crop failure — may permanently raise the price level. It is usually believed by central bankers and many economists that in a situation where prices have already risen for reasons beyond the central bank's control, the central bank can still force prices back to their previous level merely by refusing to increase the money supply, but that it does not push the price level down only for fear of undesirable side effects. Porter, however, tries to show in this paper that in predominantly agricultural economies, such as Pakistan's, it may be impossible to counteract apparently temporary shifts in the price level by means of traditional monetary policy and that a higher price level can be maintained whether or not the central bank expands the money supply. This paper provoked valuable comments from Hugh Patrick and Lester Chandler which, alongwith the rejoinder by the author, are included in this volume because these are virtually inseparable from Porter's paper and very useful in clarifying certain issues, although the commentators were not at any time associated with the Institute.

The articles included in this volume have, I am sure, considerably increased our understanding of some of the problems in the monetary field which still confront Pakistan.

Part I

Fiscal Problems

The Weight of Tax Revenue in the Pakistan Economy

A. H. M. Nuruddin Chowdhury

This chapter originally appeared as an article in the Spring-1963 issue of *The Pakistan Development Review* and is the result of research carried out in 1963 when the author was a Staff Economist at the Pakistan Institute of Development Economics,

The author is indebted to Dr. John H. Power, a former Research Advisor at the Institute, for helpful guidance. Dr. M. Akhalqur Rahman, a former Senior Economist, and Dr. Christoph Beringer, a former Research Advisor at the Institute, kindly read an earlier draft and made useful comments.

Dr. Chowdhury is at present a Deputy Director (Research) at the State Bank of Pakistan.

The Weight of Tax Revenue in the Pakistan Economy

A. H. M. Nuruddin Chowdhury

This paper provides a general review of taxes in Pakistan with special reference to the central government tax efforts. The weight of central taxes in national income and in the central budget is analysed using the tax data for the period 1948-62. Some suggestions are made about mobilizing more savings by raising tax revenues.

The Case for Raising the Weight of Tax Revenue

In the developing countries, we usually find a fiscal system where the relative weight of the public revenues in the total economy is meagre and limited to certain sectors. This state of affairs tends to make fiscal policy weak as well as blunt. As increasing the effectiveness of monetary policy in underdeveloped countries presupposes organization and wide dissemination of monetary institutions, so a prerequisite for an efficacious fiscal policy is enhancement of the influence of taxes in the economy ("A tax policy that reaches almost the entire population is essential" [15, p. 267]).

Enhancement of the relative importance of taxation in the economy is essential for a number of reasons. First, the governments of the developing countries have to finance increasingly larger development programmes. The safe way to acquire the necessary resources is through taxes, as supply rigidities make flirtation with inflationary finance a dangerous game ("Taxation appears to be the only alternative if inflation is to be avoided" [2, p. 326]). Second, power to tax brings with it the power to regulate. The government can perform its function of guiding the economy along

the planned course without excessive reliance on direct controls only if it is adequately armed with effective tax powers which can touch any part of the economy according to the need of circumstances. Third, built-in stabilizers and countercyclical tax adjustments can successfully offset fluctuations in income and employment "where the ratio of taxes to national income is high, a large proportion of revenue is from net income taxes and there is a large foreign-trade sector subject to *ad valorem* import and export duties" [5, p. 139]. Finally, in the absence of a well-organized capital market, a system of government taxing and lending can help channel savings into development investment.

The considerations set out in the foregoing passages drive home the fact that one of the important fiscal goals of Pakistan should be to enhance government's tax revenues. The present low level of tax revenues in Pakistan contrasts glaringly with the high level reached even in countries at a similar stage of economic development *(see,* Table III).

A General Perspective of the Tax System in Pakistan

In August 1947, Pakistan inherited the tax system developed under the British rule in India which was adopted with some modifications. The tax system has some important constitutional features. Taxes are levied by two levels of governments, at the centre and at the provinces, each having well-defined jurisdiction within which to exercise their power to tax[1]. Because of the relative inadequacy of the revenue sources wholly given to the provinces, a system of sharing in the proceeds of some important centrally managed taxes has been installed following the recommendation of Sir Jeremy Raisman, one-time finance minister of the undivided India. The tax powers and the relative shares in the proceeds of the taxes currently enjoyed by the central and provincial governments are based, more or less, on t-be recommendations contained in the *Raismatt Award* of 1951[3]. In spite of the efforts of this *Award* to secure an equitable distribution of the sources of revenues, the provinces have to rely heavily on central grants-in-aid often to meet even a part of their current expenditures. Changes in this scheme have been made from time to time in deference to the changing revenue needs of the various governments and the growth and decay of the various sources[3].

A summary idea of the tax structure of Pakistan may be obtained from Table I which shows the composition of the total tax revenue of central and provincial governments.

1 Local bodies also have minor powers to tax in their limited jurisdiction.

2 For a detailed discussion of the provisions of this *Award* and the constitutional background *sre* [1, Pp. 109-310].

3 The latest of such changes have been proposed by the Central Finance Commission, 1962,

TABLE I

TOTAL TAX REVENUE OF CENTRAL AND PROVINCIAL GOVERNMENTS AND ITS COMPOSITION

Revenue sources	Actuals 1960/61
	(rupees in lacs)
Income tax and corporation tax	39,81
Land revenue	24,19
Customs	61,80
Excise duty	40,21
Sales tax	46,42
Miscellaneous	31,76
Total:	2,44,19

Source: [12, Pp. 204-205, 224-225 and 228-229].

Of these, most of the land revenue and a number of minor taxes included in the miscellaneous group are collected by the provinces. All other important sources belong to the centre. The provinces get a share of the four major taxes according to a schedule fixed on the basis of the *Raisman Award*. In 1960/61, the share of the provinces was as follows:

TABLE II

Name of the tax	Amount	Per cent of total collection
	(rupees in lacs)	
Income tax	5,87	15.3
Customs	3,55	5.7
Excise duty	5,77	14.4
Sales tax	22,35	47.8
Total allocation to provinces	37,54	20.1
Total allocation to East Pakistan	14,52	7.8
Total allocation to West Pakistan	23,02	12.3

Source: [12, Pp. 220-221].

This allocation failed to meet the revenue needs of the provincial governments, especially of East Pakistan. Because of its emphasis on source of collection as a criterion in determining the share of the provinces, East Pakistan got a smaller share. A distribution on the basis of relative size of population, it was thought, might be more satisfactory because source of collection may not be related to the incidence of the taxes and also because this is more in conformity with federal principles. The recent changes in allocation have taken note of these factors and give a larger share to the provinces.

Table II.1 shows the allocation of centrally collected taxes to the provinces in the budget of 1962/63 which incorporates for the first time the recommendations made by the Central Finance Commission in 1962. The share of the provinces has increased from 21.5 per cent to 32.2 per cent of the total collection. The provinces have now become recipients of shares from corporation tax and, another minor source, estate duty. The share of East Pakistan has been enhanced considerably by the adoption of population ratio of the two provinces, along with source of collection, as a basis for determining their relative shares. The total amount allocated to East Pakistan is slightly more than that allocated to West Pakistan. A distribution made completely on population basis, however, would be in the ratio of 56:44 in favour of East Pakistan.

TABLE II.1

Name of the tax	Amount	Per cent of total collection
	(*Rs. in lacs*)	
Income tax and corporation tax	22,00.0	47.8
Customs	910.0	12.7
Excise duty	806.0	17.1
Sales tax	30,60.0	59.4
Estate duty	5.6	20.0
Total allocation to provinces	69,81.6	32.2
Total allocation to East Pakistan	35,05.6	16.2
Total allocation to West Pakistan	34,76.0	16.0

Source: [12, Pp. 220-221].

The Burden of Aggregate Taxation in the Economy

Apart from the political and administrative problems of distributing the sources of revenues between the levels of governments, the more intractable and economically more significant problem is posed by the persistently low level of the aggregate tax revenue. The position of Pakistan in this field compares unfavourably even to that of some of the underdeveloped countries of Asia and the Far East. Table III shows the comparative tax burden in Asian countries for which data are available.

TABLE III

RELATIVE WEIGHT OF TAXES IN SELECTED COUNTRIES

Name of the country	Year	Total tax revenues as per cent of national income
Burma	1959/60	23
Cambodia	1959	15
Ceylon	1959/60	21
Federation of Malaya	1959	18
India	1959/60	10
Indonesia	1959	6
Japan	1959/60	14
Republic of Korea	1959	16
Pakistan	1959/60	7
Philippines	1959/60	11
Thailand	1959	13

Sources: *i*) For Pakistan, from estimates of [14].
ii) All other countries, from [16, Pp.170 and 211-214].

Figures in Table III clearly show that except for Indonesia, Pakistan ranks lowest in order of relative tax burden borne by the economy. A comparison of the per capita national income of these countries may be interesting here. The per capita national income of Burma has been estimated to be 20 dollars less and that for Ceylon to be 40 dollars more than the per capita national income of Pakistan [17]. But both Burma and Ceylon have mobilized a much higher proportion of their national income in tax revenues.

This suggests that per capita income is not very decisive, at least within this range, in determining what proportion of national income could be raised in taxes.

Share of Direct and Indirect Taxes

Like most underdeveloped countries, Pakistan depends heavily on indirect taxes, though this has diminished over the past decade owing to the decline in the importance of customs revenue. In 1949/50, revenue from customs alone constituted over 60 per cent of the central tax revenue though foreign trade constituted only a little over 12 per cent of the national income. Customs revenue formed only 31.2 per cent of centrally collected tax revenues in 1961/62.

In 1959/60, the Planning-Commission estimate places the proportion of direct taxes in the consolidated budget of the central and provincial governments at 33 per cent of total tax revenue. This is compared in Table IV below with the breakdown of total tax revenue into direct and indirect for all the countries as shown in Table III above.

TABLE IV

WEIGHT OF DIRECT AND INDIRECT TAXES IN SELECTED COUNTRIES

Name of the country	Year	Percentage of direct taxes	Percentage of indirect taxes
Burma	1959/60	32	68
Cambodia	1959	12	88
Ceylon	1959/60	19	81
Federation of Malaya	1959	18	82
India	1959/60	31	69
Indonesia	1959	41	59
Japan	1959/60	50	50
Republic of Korea	1959	26	74
Pakistan	1959/60	33	67
Philippines	1959/60	22	78
Thailand	1959	8	92

Source: Same as in Table III.

Only in Japan and Indonesia is the proportion of direct taxes more than that in Pakistan, as shown in Table IV. Thus, the relative weight of direct taxes in Pakistan is high in relation to most of the other Underdeveloped Asian countries. The greater weight of indirect taxes in those countries can be explained by the much greater importance of foreign trade in most of those countries compared to that in Pakistan. The weight of indirect taxes in Pakistan is, however, much higher than that in most of the developed countries. Indirect taxes constitute only around 25 per cent of the total tax revenue in the United States and 43 per cent in United Kingdom, though in France their share is 67 per cent.

Another characteristic of the fiscal scene in Pakistan is the ever-widening gap between government expenditure and tax revenue *(see* Table V, Column (6)). To meet the defence requirements of the country, to defray the cost of the civil administration and to finance the developmental programme, the government has to spend well near 5 billion rupees. The total tax revenue falls far short — less than 2.5 billion (in 1960/61).

At present, the base of the tax structure remains very narrow. Most of the central taxes are confined to the urban and commercial sector of the economy. The vast subsistence rural sector lies outside the direct jurisdiction of the central tax authorities. Land revenue and agricultural income tax are provincial subjects. For political and administrative reasons, the provinces have failed so far to tap these sources adequately. No successful drive has been initiated to tax the nonmonetized sector. Even in urban and rural monetized sectors, the tax burden has not reached a level commensurate with the demands of a development-oriented society. The central government has been the main agent so far in the collection of taxes in Pakistan. We shall examine the results of its tcIX efforts a little more thoroughly in the next few pages.

The importance of tax revenue can be viewed from several angles. In Table V, we present the total centrally collected tax revenues as a per cent of three relevant magnitudes: total revenue receipts of the centre, total budget expenditure of the centre (capital and current) and total national income. In Table VII, we consider the changing weights of the individual taxes in the total tax revenue. The period covered is split into two parts, namely, pre-Martial-Law (1948-58) and Martial-Law (1958-62). The pre-Martial-Law trends are analysed first.

The Position of Tax Revenues during the Pre-Martial-Law Period, 1948-58

a) Total tax revenue as per cent of total revenue receipts: Column (5) of Table V shows that prior to Martial Law total tax revenue was diminishing in importance in the total revenue receipts of the central government.

TABLE V

TOTAL TAX REVENUE COLLECTED BY THE CENTRE AS PER CENT OF TOTAL REVENUE RECEIPTS, TOTAL BUDGET EXPENDITURE AND NATIONAL INCOME

Year	Total tax revenue collected by the centre	Total revenue receipts of the centre	Total budget of the centre (capital and revenue)	Total national income at current prices	Col.(1) as per cent of Col. (2)	Col. (1) as per cent of Col. (3)	Col. (1) as per cent of Col. (4)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	(.....*rupees in lacs*.....)						
			(Pre-Martial-Law Period)				
1948/49	63,92	76,79	1,14,55	—	83.2	55.8	—
1949/50	81,46	98,16	1,92,04	16,84,90	83.0	42.4	4.8
1950/51	1,23,13	1,41,17	1,76,57	17,20,50	87.2	69.7	7.2
1951/52	1,43,87	1,61,83	2,34,85	16,56,60	88.9	61.3	7.7
1952/53	1,28,67	1,52,31	2,18,42	18,41,80	84.5	58.9	7.0
1953/54	1,00,09	1,28,52	2,02,19	18,37,70	77.9	49.5	5.4
1954/55	1,08,80	1,36,38	1,83,69	15,98,10	79.8	59.2	6.8
1955/56	1,34,11	1,66,37	2,14,00	18,11,00	80.6	62.7	7.4
1956/57	1,25,85	1,54,99	2,28,42	23,60,50	81.2	55.1	5.3
1957/58	1,31,22	1,74,95	2,99,69	23,37,10	75.0	43.8	5.6
			(Martial-Law Period)				
1958/59	1,39,32*	1,84,80*	2,94,64*	23,39,50	75.4	47.3	6.0
1959/60	1,61,80	2,17,95	3,50,15	26,45,30	74.2	46.2	6.1
1960/61	1,94,75	2,47,01	3,56,14	**28,91,31**	78.8	54.7	6.7
1961/62	2,16,05	2,66,66	4,19,84	**31,37,07**	81.0	51.5	6.9

*One-fifth of the total has been deducted as the published data relate to 15-month period.

Notes: Revenue figures include provincial share of the central taxes.
Figures for 1961/62 are revised estimates.

Sources: National income at current prices upto 1959/60 from [11, p. 21].
Figures for 1960/61 and 1961/62 extrapolated on the basis of [13, p. 51].
All other data from budget documents of the Government of Pakistan.

The percentage declined to 75 in 1957/58 as against 83 in 1948/49. The extent of the decline remains pretty much the same even if we consider the difference between the averages of the first five years and the second five years. If we ignore the bump of the Korean-boom period, the ratios form a slightly decreasing trend[4]. This down trend has its counterpart in the greater increase registered by some of the nontax revenue sources, as shown below:

TABLE VI

GROWTH OF SOME IMPORTANT NONTAX REVENUE DURING 1948-58

Heads of revenue	1948/49	1957/58
	(*rupees in lacs*)	
Railways	3,34	10,22
Debt services*	4,94	8,99
Currency	—	3,44
Total nontax revenue	12,90	43,76

*Mainly interest on capital in charge of the commercial departments, on loans to provincial governments and interest and dividend on government investment in corporations.

b) Total tax revenue as per cent of total budget: This is presented in Column (6) of Table V. The simple average weight of the total tax revenue in the total budget during the ten-year pre-Martial-Law period is 55.8 per cent[5]. The weight exceeded the average by more than 10 percentage points in only one year of the Korean boom, 1950/51, and fell below the average by more than 10 percentage points in two years, 1949/50 and 1957/58. The heavy increase in expenditure in the latter two years, out of inflationary sources, may be noted[6].

The obvious conclusion is that the government could not achieve any headway in the direction of meeting a greater proportion of its expenditure from taxes. Inability to match increased revenue needs from tax revenues forced the government to resort to inflationary sources. It is

[4]The ratios of total tax revenue to total revenue receipts of the centre will become lower still if we exclude the share of the provinces in the tax revenue from both the numerators and the denominators.

[5]The numerator, total tax revenue of the centre, includes the provincial share of the taxes. If we exclude the provincial share in the taxes, the simple average weight of total tax revenue in the total budget of the centre becomes only 46.6 per cent.

[6]*Ad hoc* treasury bills, drawal on cash balances and increase in the permanent debt are included in this category.

natural that a government called upon to meet large developmental expenditures is not likely to succeed in raising hundred per cent of its revenue requirements from taxes. But 50 per cent or less, on the other hand, indicates a very poor tax effort. Besides, the volume of developmental outlays by the government was too low to propel the economy towards sustained growth.

c) Total tax revenue as per cent of national income at current prices: The inadequacy of the tax effort in the pre-Martial-Law period appears in sharper relief when total tax revenue is viewed as a percentage of national income. The average level of taxation compared unfavourably to those reached in other 'underdeveloped' countries *(see* Table III). Table V shows that the weight of taxes was not only low but also had a declining trend during the period under review. The average weight of tax revenue during last four years of the pre-Martial-Law period was less than the average weight during the first four years, whereas the aim should have been to increase this weight. Even if allowance is made for the high level of tax receipts during the Korean boom, the weight of taxes remained rather static. This must be considered very disappointing. The 6- to 7-per-cent figure also probably overestimates the relative tax burden when we consider that the national-income figure is believed to be suffering from considerable underestimation. Another discouraging aspect of this low weight of taxes is that it persisted in spite of the appreciable growth in the more heavily taxed sectors.

d) Relative weight of individual taxes in the total tax revenue: The preceding section reveals that the weight of total tax revenue in the national income was low and stagnant during the period ending in 1957/58. This must have been due to a general inelasticity of the aggregate tax system or to changing weights of different taxes, despite an overall elasticity. Table VII is designed to show how the weights of individual taxes were changing in the aggregate tax revenue.

Of the five taxes studied, all except the customs gained in weight. This is a desirable trend insofar as the tax revenue becomes free from its extreme dependence on a single source. But this change in the relative weights, it should be noted, is due principally to the decline in customs revenue rather than to a high elasticity of the other taxes [4]. Personal income tax and excise duty showed steady growth over the period. Sales tax became important quite early in the period and remained stable thereafter. Corporation tax increased quite sharply during the first half of the period but then declined in relative importance. As for the relative weight of total direct taxes, as opposed to the weight of the indirect taxes, the situation significantly altered in favour of the direct taxes. Income and

TABLE VII

RELATIVE WEIGHT OF INDIVIDUAL TAXES IN THE TOTAL TAX REVENUE COLLECTED BY THE CENTRE

Tax	Pre-Martial-Law period										Martial-Law period			
	1948/49	1949/50	1950/51	1951/52	1952/53	1953/54	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62
	(... ..... *in per cent* .....)													
Personal income tax	9.9	13.2	9.2	9.8	13.0	14.6	18.0	13.5	16.7	17.6	19.0	16.7	14.7	15.5
Corporation income tax	0.4	0.9	1.7	2.2	2.9	6.2	3.1	4.5	3.3	4.9	4.8	5.4	5.0	4.5
Excise duty	8.7	6.7	5.8	5.2	7.4	16.3	13.4	12.5	14.5	16.5	18.3	20.7	20.6	19.8
Sales tax	12.1	17.4	11.3	17.4	17.1	15.8	17.6	17.2	19.4	20.4	19.2	19.1	24.0	26.0
Customs	61.3	56.8	68.5	61.3	54.6	40.1	41.9	45.9	41.0	35.3	31.3	34.4	31.9	31.2
Others	7.6	5.0	3.5	4.1	5.0	7.0	6.0	6.4	5.1	5.3	7.4	3.7	3.8	3.0

Notes: Figures include the provincial share of the central taxes.
Figures for corporation tax after 1958/59 and all figures for 1961/62 are revised estimates.

Source: Budget documents of the Government of Pakistan.

corporation taxes constituted 22.5 per cent of the total centrally collected tax revenues in 1957/58 as against 10.3 per cent in 1948/49.

The **Position of Tax Revenues during the** Martial-Law **Period, 1958-62**

The discussion in the preceding section relates to the pre-Martial-Law period. The Martial-Law period is considered separately to note any difference that might have been brought about by the new regime.

The figures in Tables V and VII, relating to this period, do not show any marked deviation from any of the trends indicated earlier. Total tax revenue collected by the Centre, viewed as per cent of total national income, has been steadily rising since 1957/58 but the 6.9-per-cent figure reached in 1961/62 still remains below that for 1950-53 or even 1955/56. The magnitude of total tax revenue as per cent of total budgeted expenditure, while it has risen since 1957/58, has remained below its average of the pre-Martial-Law years. This means that though there has been some growth of tax revenues, this has been slower than the growth of total budgeted expenditure. There has been, however, much greater availability of foreign aid. The increased role played by external resources in financing the expenditure of the government during the Martial-Law period can be seen in Table VIII where the total external resources received by the government are presented along with the total consolidated capital budget of the central and provincial governments for the years 1951/52 to 1961/62. The amount of external resources received by the governments during 1948-51 was nil. In the very first year of the Martial-Law period, external resources received by the government shot up from 6.5 crore to 63.0 crorc rupees, an increase of 56.5 crore rupees, while total consolidated capital expenditure increased by only 31.3 crore rupees. The reduction of inflationary finance by the Martial-Law regime was clearly made possible only by the greater avail ability of foreign assistance during this period.

Revenues have risen significantly only from excise duties and sales taxes. The collection from personal income tax momentarily boosted up as a result of panic disclosures of hoarded wealth and payments of outstanding arrears, giving an appearance of a break with the past trends. Revenues from that source declined, however, after the first year of the Martial-Law period. The decline in the weight of customs, witnessed earlier, continued in this period as revenues from this source failed to grow proportionately.

In summing up, it may be said that the new regime could not affect much of a change-over in fiscal management in spite of its declared intentions to follow a policy of paying its way through taxes rather than through printing of new money. Lack of success in the fiscal front to mobilize

TABLE VIII

THE WEIGHT OF EXTERNAL RESOURCES IN THE GOVERNMENT EXPENDITURE

Year	Pre-Martial-Law period							Martial-Law period			
	1951/52	1952/53	1953/54	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62
	(*in lacs of rupees*)										
Total external resources received by the government	23	7.34	1,97	3,88	1,45	3,91	6,47	63,32	69,11	1,00,02	1,21,59
Consolidated capital budget of the central and provincial governments	91,07	1,05,49	1,04,69	76,08	63,82	1,06,37	1,51,79	1,83,08	1,89,83	1,76,32	2,78,10
Row 1 as per cent of row 2	0.3	7.0	1.9	5.1	2.3	3.7	4.3	34.6	36.4	56.7	43.7

Source: Budget documents of the Government of Pakistan.

resources and a conservative reluctance to use inflationary means kept the new regime also wedded to timid development programmes and heavy reliance on foreign aid. The problem of making taxes a chief instrument for mobilizing domestic resources, thus, remains.

Considerations with Regard to Improving the Productivity of Taxes in Pakistan

While the foregoing pages depict a grossly inadequate and stagnant tax system, the need for dynamizing it cannot be overemphasized if the aspirations of economic development are to materialize. The Taxation Enquiry Committee in its recent report recognized this need and suggested many alterations in the present tax system. But fringe changes cannot obtain the desired result. What is necessary is a fundamental shift in the assumptions of tax policy and transformation of the tax administration. The tax policy should stretch the capacity of the economy to the limit, favour the economically active agents while penalizing the sinecure-holders and should not mince the need for straining groups or sectors — granting that the resources so derived will be put to development efforts that will benefit all in the long run.

The tax-planner in Pakistan confronts many constraints in choosing tax measures, namely, the convenience and capacity of tax administration, effects on the incentive to save and invest, effects on efficiency, considerations of equity and the political power of interested groups. These are constraints which tax-planners everywhere have to face. But the strength and importance of these constraints need to be interpreted in the light of the special circumstances of the country. The nature of the tax structure and the attainable tax target for Pakistan should be determined on the experience of countries similarly situated and in the context of its special needs and values. When considered in this way, many of the constraints seem less confining.

First, the consideration of saving and investment should be viewed in terms of aggregate saving and investment. A tax may increase aggregate saving even if it reduces private saving, if the public propensity to save is higher than the private propensity to save at the margin. Moreover, increased saving in the public sector is necessary at the initial stages of development. In an underdeveloped country, savings in the private sector often remain in idle hoards or go to unproductive uses because inadequate social overhead capital makes investment difficult and unattractive. To a certain extent, greater public saving, even at the cost of smaller private saving, may encourage capital formation ultimately by creating these social overheads and initiating neglected industries.

The need for more public saving should not be viewed just as a pretext for increasing investment in public sector. In an underdeveloped country having no advanced capital market, public saving can serve as a substitute for private capital market Private saving may be accruing in Pakistan to entrepreneurs engaged in certain lines of industries while the social need for new investment lies in other lines of activities with which these savers are not familiar or to which they are reluctant to go. The government can augment public saving by taxing the high profits earned by these entrepreneurs and channel the funds to private investors in other fields.

Second, the concern over incentive to work and efficiency also should be viewed in conjunction with the average living standard of the country. Any income much above the national average is able to bear substantial tax burden without any impairment of the incentive to work or of efficiency. The more relevant problem of incentive is one of maintaining proper income differentials between occupations rather than an absolutely high level of disposable income. To the extent that a higher tax burden falls *on* people who are currently performing little economic function, taxes can not only succeed in bringing more revenue to public coffers but also encourage the supply of economic enterprise.

Third, indirect taxes can continue to be an effective way of taxing the people without seriously offending the principle of equity. Indirect taxes have been observed to possess some degree of progressivity in the case of underdeveloped countries [7, Vol. I, p. 69]. The consumption pattern in these countries is such that the lower the income level the fewer are the items of consumption in the family budget over and above the bare necessities of life which are always either duty-free or lightly taxed. Indirect taxes can hit directly at consumption and may be used to provide an equitable distribution of sacrifices in consumption between different income groups. This equity, rather than the equity in distribution of income, is more relevant in the developing countries [3, p. 67]. Besides, while worrying about equity, the benefits from increased government expenditures must be considered. It should also be remembered that the real choice is often whether to take away the income by taxes or by printing new money. The former is not only more honest but more wise inasmuch as its impact can be more accurately predicted.

Fourth, the problem of administrative limitation is often overstressed. Though there is much to be said in favour of simplifying the administration of any tax as far as possible, the productivity of the tax should not always be sacrificed in order to reduce the administrative burden. Rather attempts should be made toward expanding and improving the quality of the tax

administration. Development programmes cannot succeed without a developed tax administration behind them. Expenditure on the education and training of tax administrators will fully repay the public treasury. Given these changes in the attitude of the tax-planner and in the quality of the tax administration, Pakistan can hope to raise 15 to 20 per cent of its national income through taxation, a level which has already been achieved by other underdeveloped countries *(e.g.,* Burma, Ceylon).

Some Measures Proposed for Increasing Tax Revenues

It has been estimated that governments in the underdeveloped countries have to mobilize 20 per cent or more of GNP to meet their capital and current expenditure, depending upon the role that government is required to play in providing invcstible finance for economic development [10, p. 218] , Iii Pakistan, the consolidated revenue budget of the central and provincial governments accounted for 10 per cent of national income both in 1960/6.1 and 1961/62. The consolidated capital budget amounted to another 6 per ' cent of national income in 1960/61 and 9 per cent in 1961/62, So it appears that Pakistan also needs to mobilize in taxes some 20 per cent of GNP to finance the government expenditures mainly through taxes and to compensate for low private saving in the economy. This means increasing the relative weight of taxes in the national income of Pakistan almost three-fold. A very aggressive and well-conceived tax policy is called for to achieve such an ambitious target. We shall conclude this paper with some broad suggestions on possible fiscal measures in the context of particular taxes in Pakistan and with an appraisal of their revenue prospects.

Direct Taxes

Not having a large export sector makes it necessary for Pakistan to kO,hc the yields of the direct taxes. Of the direct taxes again, the main emphasis has to be on personal income tax and corporation tax. Direct taxes on capital and wealth cannot raise a significantly large proportion of national income in revenue because Pakistan, an underdeveloped country, is by definition a capital-poor country. Wealth taxes may be levied oii grounds of equity and to check against evasions of the income tax and their yield can be increased substantially over their present level. But it is on personal A income and corporation taxes tli^t rclisncc must be placed to collect a very liigh proportion of GNP.

The present coverage and the average rate of personal income tax in Pakistan are very inadequate. The number of persons assessed to pay income tax is less than .1 per cent in Pakistan whereas it is around 25 per cent in the United Kingdom and the United States. Again, persons

earning similar levels of income in Pakistan bear a considerably lower tax burden compared to their foreign counterparts until they reach very high levels of income — this, in spite of the fact that the relative position of the persons earning the same income, is much higher in Pakistan.

The reasons usually given for the narrow coverage and low average rate of the personal income tax in poor countries are as follows [10, Pp. 222-229]. It is thought that the poor countries have to tax relatively more people to raise the same proportion of the GNP. The cost of collection is too large compared to the small collections made from the average assessees. Rates on the lower- and middle-income grades have to be moderate because these groups bear relatively greater burden of providing for the education of their dependents.

The reasons mentioned above are largely based on some misconceptions and the truth contained in them cannot account for the wide differences in the burden of income tax between persons in the underdeveloped countries and the developed countries. First, inequality of income distribution in Pakistan *is* perhaps greater than that in many developed countries. So Pakistan can raise the same proportion of GNP by taxing relatively fewer people. Second, the importance of higher unit cost of collection is often exaggerated. Low average collection is partly matched by the low average salary of the tax collectors. This constraint will be further relaxed when the average rate of tax is increased. Third, indiscriminate tax concession to everybody is not a happy way to provide relief to those who have to pay for the heavy educational expenses of their dependents. For this, special allowances can be made. But a more effective way to handle this is liberal provision of scholarships and subsidized education in socially desirable lines. This will, at the same time, reduce the common spectacle of a poor man's meritorious ward going without proper education while money is being wasted on worthless sons of the well-to-do. Altogether, there seems no strong case for not making the coverage and the average rate of personal income tax comparable to those in developed countries, but the need for doing so is far greater here.

Indirect Taxes

The narrow base for many of the direct taxes plus administrative limitations in underdeveloped country has made use of indirect taxes attractive. Pakistan also cannot neglect this expedient. But, since the volume of foreign trade is low, the prospects of raising more revenue from export and import duties are dim. Heavier taxes on domestic trade is another alternative.

We suggest the adoption of a comprehensive sales tax[7]. For this, commodities may be classified under three broad categories. Category one would contain the basic necessities which weigh heavily in the average family's budget and whose prices must be kept from rising, if reasonable stability in the cost of living is to be achieved. These would be tax free and their supply would have to be expanded to accommodate increased demand, if prices are to remain more or less stable. Category two would consist of semi-necessities. A moderate sales tax of about the present level should be levied on them. Normal elasticities of supply and demand should be allowed to determine the equilibrium prices of commodities in this group. Category three would cover all luxuries and socially undesirable commodities. Prices of these things should be allowed to soar to their equilibrium-frec-market level with supply fixed. The sales tax 011 this group should be designed to take away all of the excess profit so that there is no tendency on the part of private entrepreneurs to expand their supply. The actual rate of tax to be charged could be arrived at theoretically from knowledge of the income and price elasticities of demand for these commodities. The list of commodities in each category should be prepared on the assumption of a really tough policy towards consumption, keeping in view the average level of living in the country. Expansion of the domestic market of a commodity in the third category may be allowed only in a case where this is necessary for the sound growth of an industry with a big export potential[8].

The two taxes dealt with so far touch mostly the industrial-urban sector. Because of relatively less monetization in the rural sector and non-inclusion of agricultural income for the assessment of personal income tax, the rural sector of the economy, where the major portion ofnational income accrues, remains relatively unscathed by the tax proposals made above. Nevertheless, this emphasis on taxing the urban sector has some important advantages, First, it favours a high incremental saving ratio as income rises more rapidly in the urban sector. Second, insofar as urban consumption tends to have a high import content, this will yield more saving on foreign exchange. Third, restriction of urban consumption demand, especially of luxuries, will force industrial profits to be invested more in capital-goods industries as well as in essential consumption-goods industries.

Agricultural Taxation

A poor country must look ultimately to its agriculture, however, for the economic surplus necessary to finance development. Here is where

7"If an underdeveloped country needs to raise some 15 to 20 per cent of GNP in revenue and cannot rely heavily on a large yield from taxing foreign trade, the adoption of some form of a sales tax is inevitable" [10, p. 227].

8This scheme for a sales tax for Pakistan follows suggestion made by Dr. John H. Power, a former Research Adviser at the Pakistan Institute of Development Economics.

most of the national income is generated and here is where the labour supply for industrialization largely originates. The growth of the industrial labour forces must be matched, at least in part, by a flow of saving from agriculture. At present, a sizeable transfer occurs through the maintenance of adverse terms of trade for agriculture and the overvaluation of the rupee. But at the same time, agricultural taxation has lagged and failed to mobilize fully the economic surplus which is being augmented by agricultural improvements and overhead investments undertaken by the government. Moreover, adverse terms of trade tend to discourage production and encourage consumption of agricultural output in rural areas, while it is the reverse that is needed. In short, there is a greater role for tax policy to play in mobilizing agricultural resources for development.

Clearly, a greater contribution from agriculture depends primarily on increased output. This, in turn, may require rather fundamental changes in the organization of agriculture. While extreme measures like collectivization of agriculture are detested in our country, a reorganization of our agriculture on the generally approved principles of cooperation should be feasible[9]. This could be highly rewarding from the point of view of both resource mobilization and productive efficiency. The energies of all the government and government-sponsored agencies currently engaged in agriculture might be joined into one comprehensive agency to make this change-over successful.

Until such a thorough-going solution is possible, attention should be concentrated on removing the slack in the taxation of agriculture. The primary emphasis should be on land taxation, since by increasing the cash needs of the farmers and penalizing unproductive use of land, both production and marketing are encouraged. In addition, means must be found for implementing income taxation in agriculture to curb the consumption of the high-income recipients.

The measures suggested above are subject to stupendous political and administrative constraints. The author has no illusions in this respect. The measures are not tipped because the political and administrative matrix is all set for them. This paper is an attempt to show the leeway in the fiscal front, the magnitude of the tax efforts we need to make and the possible directions and emphasis of the tax policies. Once these are found convincing, the constraints may start loosening. It may come to be considered worthwhile to build up a tax administration which is more business-like,

9 A case for cooperative farming in India is presented in [8, p. 140]. The prospects of cooperative methods in the Pakistan agriculture are highlighted by the success recently achieved in a rural cooperative pilot experiment conducted at Comilla Thana, East Pakistan, under the auspices of the East Pakistan Academy for Village Development, Comilla.

has different emphasis on the qualifications of its personnel and is subject to a separate discipline. A political elite having mass support may identify itself with the cause of rapid economic development. It may agree to make sacrifices and dare to offend interested groups who have to be hurt in the short run. Again, all these may have to be preceded by the generation of that 'popular enthusiasm' which has been termed by Professor Lewis as "both" the lubricating oil of planning, and the petrol of economic development" [9, p. 128].

REFERENCES

1. Andrus, J. R. and A. F. Mohammad, *The Economy of Pakistan.* (London: Oxford University Press, 1958).

2. Bhargava, R. N., "Taxation Policy", *Public Finance,* No. 4, 1959.

3. Chelliah, Raja J., *Fiscal Policy in Underdeveloped Countries.* (London: George Allen and Unwin Ltd., 1960).

4. Chowdhury, A. H. M. Nuruddin, "The Predictability and the Flexibility of Tax Revenues in Pakistan", *Pakistan Development Review,* Vol. II, No. 2, Summer 1962.

5. Goode, Richard, "Report of the Indian Taxation Enquiry Commission", *National Tax Journal,* 1956.

6. Higgins, B., *Economic Development.* (New York: Norton and Company Inc., 1959).

7. India, Taxation Enquiry Commission, *Report,* 1953-54. (Delhi: Government Printing Press).

8. Khusro, M. A. and A. N. Agarwal, *The Problem of Cooperative Farming in India.* (Bombay: Asia Publishing House, 1961).

Lewis, W. A., *The Principles of Economic Planning.* (London: Allen and Unwin Ltd., 1949).

10. Martin, A. M. and W. A. Lewis, "Patterns of Public Revenue and Expenditure", *The Manchester School of Economics and Social Studies,* September 1956.

11. Pakistan Institute of Development Economics, *A Measure of Inflation in Pakistan,* 1951-60. (Karachi: PIDE, March 1961).

12. Pakistan, Ministry of Finance, *Explanatory Memorandum: Budget of the Government of Pakistan,* 1962-63. (Karachi: Manager of Publications).

13. Pakistan, Planning Commission, *Mid-Plan Review.* (Karachi: Manager of Publications, 1962).

14. Pakistan, Planning Commission, *Second Five-Year Plan,* 1960-65. (Karachi: Manager of Publications).

15. Shirley, David E., "Income Taxes for Lesser Developed Nations", *National Tax Journal,* Vol. XII, 1959.

16. United Nations, *Economic Survey for Asia and Far East,* 1961-62. (New York: United Nations).

17. United Nations, *Per Capita National Product of Fifty-Five Countries:* 1952-54. Statistical Paper Series E, No. 4. (New York: United Nations, 1957); quoted in [6, p. 10].

The Predictability and the Flexibility of Tax Revenues in Pakistan

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The Predictability and the Flexibility of Tax Revenues in Pakistan

A.H.M. Nuruddin Chowdhury

Evolving an efficient tax system is a major concern in any developing country, because the pace and viability of development programmes depend heavily on the tax system. An efficient tax system should satisfy tests on many counts. This paper analyses two aspects of Pakistan's tax structure, namely, its predictability and its flexibility. In Section I, the efficacy of the revenue estimating procedures in Pakistan is analysed. Section II contains a discussion on the flexibility of the central tax revenues with respect to changes in the national output.

I. PREDICTABILITY

Importance of Revenue Estimates

In planning for economic development the task of estimating potentially available resources in advance has assumed increased importance for on this depends the size and nature of the development plan which can be undertaken. Since the government is the principal agent in the development programmes of most countries, it is necessary that it make fairly

accurate assessment of its financial position and prospects. Errors both of underestimating and of overestimating the revenues of the government will be prejudicial to economic planning. When the government underestimates its resources, its development programme will aim too low, whereas the opposite error will lead to adoption of unrealistic targets. The administration suffers from wastage, complacency and inefficiency in the first case and from anxiety, friction and frustration in the second.

In budgeting also, estimates of revenues are relevant in several ways. Firstly, revenue estimates of at least a rough and broad nature are necessary at the very outset of the budgetary process to guide the initial fiscal decisions concerning the general outline of the expenditure targets of the government. Secondly, a more firm, final estimate of revenue is needed in the summary budget statement to support new proposals for changes in taxes. Third, estimates are required by the legislature or appropriation committees at the time of reviewing the expenditure estimates. And fourth, revenue estimates help the execution process. As the execution process advances, the responsible authorities may modify the plans according to the changed prospects of revenue that subsequent re-estimates may reveal. They also can rationally plan the cash requirements and intra-year borrowing if they can anticipate the seasonal variations in receipts fairly well [3, Pp. 380-381].

These considerations justify greater efforts to assess the quality of existing procedures for estimating revenues in Pakistan and to point out if and where change is needed.

A monograph of the Pakistan Institute of Development Economics points out that the budget estimates of revenues and the actual receipts vary widely [11, Pp. 7-19]. The purpose of this section is to assess the budget estimating procedures and results in Pakistan in the context of individual taxes.

Procedure for Preparing Revenue Estimates

In the studies of fiscal discipline of government all over the world, expenditure estimates rather than revenue estimates have received greater attention from both academicians and budget-makers. A survey of the procedures followed by the estimators of revenue will reveal three principal types: the rule of the penultimate year, the method of averages, and direct valuation [2, Pp. 175-179].

According to the rule of the penultimate year and the method of averages, estimates of revenue are prepared on the basis of past collections without adjustments for any predictable changes in the future. Such estimates will lag behind actual receipts in a growing economy and thus cause unnecessary inaccuracy in government plans. To avoid this fault, methods of direct valuation have recently been adopted by many governments. The

technique involves the collection of statistical material concerning factors which affect the revenue proceeds. Then, through statistical analysis and projections, future revenues are forecast directly rather than by extrapolations. The revenue estimates of the British Treasury, which follows this technique, have a high reputation for accuracy.

The Organizational Framework in **Pakistan**

In Pakistan there is no admitted reliance on extrapolation in estimating future revenues. Following the British traditions, a method in the nature of direct valuation is used. But the valuation process lacks much of the rigour that such a technique demands.

Those agencies responsible for collection of revenues also prepare the original revenue estimates[1]. At the head of the estimating organization is the Budget and Expenditure Division of the Ministry of Finance. As the body ultimately responsible for the task, it sets the time table to be followed by various agencies and sends out special instructions[2]. In conformity with these instructions and time schedule, the estimates are built up from the bottom.

The estimates originate in the hands of the lowest officers responsible for collection in the various agencies: an Income Tax Officer, an Assistant Collector of Customs, an Assistant Collector of Excise or a Superintendent of Excise, as the case may be. They prepare the estimates on the basis of their records of past collections and current assessments and their subjective appraisal of future prospects[3]. These are then revised by the heads of the collecting agencies.

The collecting agencies submit their original estimates along with data for actual collections during three preceding years to the Central Board of Revenue (CBR). (In the case of nontax revenue, the estimates go to the parent ministries.) The CBR frames the final estimates of all tax revenues by scrutinizing, collating and integrating the original estimates. This scrutiny is not very serious in the case of personal income taxand corpotration tax. The original estimates of these two taxes are more or less main ained because the collecting officials are assumed to know best the relevantfacts But the estimates of customs, sales and excise taxes are often drastically changed on the basis of government import policy, *etc.,* which are to some extent known to the Board and ofwhich the collecting agencies are likely to be ignorant. After being processed and checked in this way, the estimates

1This practice is followed in most countries, especially in the United Kingdom, and is not peculiar to Pakistan.

2The "Time Table" contains the deadline dates by which the revenue estimates must reach different points in the administrative hierarchy. The special instructions are more or less in the form of exhortations for showing drive and efficiency in collections.

3But the estimates seem to be greatly influenced by last year's actual collection. (*see* Appendix C).

take final shape and are submitted to the Budget and Expenditure Division. This is the final reviewing authority and it can alter the estimates in any way it likes, though in actual practice changes are made in consultation with the Board.

Thus, the estimates which originate at a low administrative level in the hands of people who have but a rudimentary statistical sense undergo a long chain of subsequent reviews. But at no stage does the reviewing procedure make use of much sophisticated technique. It is often a crude guess rather than a factual basis on which the reviewers raise or lower the original estimates. It is possible that the final estimates are less accurate than those which would be achieved if the original estimates were not tampered with.

The accuracy of these final estimates should, however, be judged in the perspective of the amount of prediction involved in the preparation of those estimates. The element of forecasting involved in the tax structure is reduced by two important factors. First, the system is so designed that the tax bases are fairly well known in some cases at the time of preparing the estimates. And second, the tax bases are often under the control of planned policy decisions and do not change much as a result of erratic, unpredictable movements in the economy. But the task of prediction is made more difficult by the introduction of new taxes and frequent changes in the rates and coverage of old ones.

The Budget Estimates for the next fiscal year and the Revised Estimates for the current year are completed after more than ten months of the current fiscal year have already passed. So, in the case of the Revised Estimates, information about the actual collection of ten months is available at the time of preparing the final (Revised) estimates. Telegraphic figures give the approximate position of the eleventh month as well[4]. Thus, the errors in the Revised Estimates should be attributable to the unknown factors of two months at most. On the other hand, the Budget Estimates are prepared fourteen months in advance and cover a period of twelve months in the future. But many factors affecting the tax revenues operate with a lag and are to that extent known to the estimators[5]. In the case of personal income tax and corporation tax, the total income assessed during ten months (possibly eleven) out of twelve months is known at the time of preparing the Budget Estimates. These features, it would appear, render the task of revenue estimation rather simple, and one would expect a fairly high standard of accuracy. We shall now turn to an examination of this.

[4]Revised estimates of revenues are submitted quarterly on the basis of actual collections. Besides this, the collecting agencies send postal figures for the tenth month and telegraphic figures for the eleventh month.

[5]The effects of new taxes which will be introduced during the year are considered by the Budget and Expenditure Division and the estimates are adjusted accordingly.

Some pertinent questions with respect to the quality of revenue estimates are the following: first, what is the extent of error[6] that the estimates suffer from? Second, is the quality of the Revised Estimates any better than that of the Budget Estimates[7]? Third, is there any bias in the estimates towards underestimation or overestimation? And fourth, has there been any improvement in the quality of the estimates in recent years?

To provide some quantitative answer to the questions posed above, some simple statistical analyses of the Budget Estimates, the Revised Estimates and the Actuals of revenue receipts are made using the budget data for the ten years, 1948-58.

A Measure of the Magnitude of Estimating Error

The average of the percentage deviations of the Budget Estimates (BE) and the Revised Estimates (RE) from the Actuals, ignoring the sign, has been taken as a measure of the inaccuracy of these estimates. In Table I, these averages of absolute percentage deviations are presented for the principal taxes of the Budget Estimates in Column (1) and of the Revised Estimates in Column (2).

TABLE I

Head	Average absolute per cent deviation	
	BE	RE
	(1)	(2)
Customs	20.3	7.6
Central excise	15.6	4.4
Corporation tax	30.1	45.7
Personal income tax	19.8	12.9
Sales tax	23.1	15.0
Total revenue	15.2	6.3

Source: Appendix B.

6Percentage deviation of the estimates from the actuals has been taken as a measure of error in the estimate.

7This will indicate the efficiency of estimating procedures when most of the variables and their effects should be already known and the period of the forecast is short.

The table indicates a poor quality of the estimates[8]. While the Budget Estimate of total revenue shows an average percentage deviation of 15.2, the magnitude of errors in the Budget Estimates of revenue from each of the major taxes is greater. In some cases the divergence of the Estimates from the Actuals is very large[9]. Such large errors, obviously require explanation. An attempt is made below to discuss some of the factors responsible for the errors.

Nature of the Factors Responsible for the Errors

The *Explanatory Memorandum of the Budget* provides some brief and cursory explanation of the errors in estimates each year. Some of these are summarised below:

Customs: Unexpected buoyancy of trade due to the Korean War, liberalization of imports, increase in export duty on cotton and imposition of a new 25-per-cent *ad valorem* duty on wool were mentioned as the cause of errors in 1950/51. The estimate of 1952/53 was not fulfilled because of restrictive import policy introduced during the year. In 1955/56, the underestimation resulted partly from an increase in revenue by 5 crore rupees on account of *i*) the adjustment of custom duties in arrears outstanding against the Central and Provincial Government Departments and *ii*) enhancements in the rates of duty on staple cotton, jute and tea. Expectations in 1956/57 were not fulfilled because the blockade of Suez Canal hampered the flow of trade. The shortfall of collection in the next year, by a bigger margin, was caused by a decline in the export of raw cotton and jute owing to a slackening of external demand and an increase in internal consumption.

Central Excise: In 1948/49, the errors were attributed to an overly conservative estimate and imposition of excise duty on cotton cloth. The shortfall in 1949/50 was due to the agreement reached with India in May 1948 whereby both the countries agreed not to levy excise duty on articles exported to each other. In 1950/51, receipts from duties on motor spirit and kerosene oil rose greatly following the abolition of petrol rationing. Receipts from tea also improved as a result of better marketing facilities. During the next three years also the collections exceeded the estimates following a steady expansion in production of cigarettes, cotton textile, motor spirits and matches. In 1954/55, the collections fell much below the estimates as a result of the abolition of duty on betel nut, the reduction in cotton textiles prices which are subject to *ad valorem* duty, and the smaller production and clearance of sugar.

[8] We have as an ideal the revenue estimates of the British Treasury. These estimates rarely fall off the Actuals by more than 1 or 2 per cent.

[9] *See* Appendix B.

Personal and Corporation Income Tax: These display persistent underestimation. The excess of collection over the estimates has been ascribed to factors such as intensive departmental drive, introduction of better system of assessment or growth in national income. Since the corporation tax is lumped with income tax in the Budget, no separate explanations of these errors have been provided. Many serious errors in the estimate of corporation tax, hence, remained unaccounted for.

Sales Tax: In 1951/52, the collections far exceeded the estimates owing to the impact of the new Sales Tax Act of 1951.

It is obvious that the explanations provided are perfunctory and incomplete. But one conclusion emerges strongly from the foregoing discussion: the estimating errors are often avoidable inasmuch as they derive from factors which can be predicted or are already known.

Accuracy of the Revised Estimates

Apparently the Revised Estimates demonstrate better accuracy than the Budget Estimates. The average of absolute percentage deviations of each of the taxes is lower except in the case of corporation tax. The average of absolute percentage deviations of the Revised Estimate is 6.3 for the total revenue. This, however, does not reflect the quality of estimates of the individual taxes. The average of absolute percentage deviation of the Revised Estimates from Actuals are 45.7, 12.9 and 15.0 for corporation tax, personal income tax and sales tax, respectively.

The average of absolute percentage deviation of the Revised Estimates is not, however, strictly comparable with that for the Budget Estimates. In the case of Revised Estimates, the error of prediction relates at most to a period of only two months. If we were to express the divergence as a percentage of the actual collection for the relevant period (two months instead of twelve months), the errors would be magnified six-fold. This would almost invariably make the Revised Estimates worse than the Budget Estimates. Even if we do not press the above argument, it is certain that the Revised Estimates are little better than the Budget Estimates.

Evidence of Bias in the Estimating Process

To test for bias in the estimates we need to calculate the average of percentage deviations of the Budget Estimates and the Revised Estimates from the Actuals. Where the average of the percentage deviations is plus, actual tax-yields have generally fallen short of the estimates, *i.e.*, the yields have been overestimated; conversely, where the average of the percentage

deviations is minus, the yields have been underestimated. Table II presents the average of percentage deviations of the Budget Estimates (BE) in Column (1) and of the Revised Estimates (RE) in Column (2).

TABLE II

Head	Average per cent deviation	
	BE	RE
	(1)	(2)
Customs	—15.5	—7.1
Central excise	—3.8	—1.7
Corporation tax	17.0	44.9
Personal income tax	—19.1	—12.9
Sales tax	—23.1	—13.8
Total revenue	—15.2	—6.3

Source: Appendix B.

The tale of Table II is unambiguous. The figures for both the Budget Estimates and the Revised Estimates show that revenue receipts are usually underestimated. If the errors of estimates were due purely to chance we should expect the average of percentage deviations to be very low (close to zero) and the errors in estimates should be plus and minus an approximately equal number of times. Calculations here strongly indicate a bias towards underestimation as the means of the percentage deviations are preponderantly negative and high[10].

Change in the Quality of Estimates over Time

Table III below is designed to show if there has been any improvement in the quality of the Budget Estimates and the Revised Estimates.

[10]The above assertion can be given further statistical validity as follows:

If we consider the percentage deviations of estimates of 5 important taxes during 10 years (as presented in Appendix B), out of the 50 estimates only in 12 cases do the Budget Estimates exceed the Actuals.

With a confidence of 95 per cent, we can reject the hypothesis that purely due to chance the Budget Estimates will exceed the Actuals 12 times out of 50, or, conversely, that they will fall short of the Actuals 38 times out of 50, assuming that the probability of overestimation and underestimation is equal. The same conclusion follows in the case of the Revised Estimates. In 34 cases out of 50, they are underestimated (*see* Appendix B).

For this purpose the full period (1948-58) has been divided into two parts: 1948-53 and 1953-58. The five-year average of percentage deviations, both absolute and with sign, for both the Budget Estimates and the Revised Estimates have been computed separately for the two periods.

TABLE III

Head	Period	*Average of per cent deviations*			
		of BE		of RE	
		Absolute	With sign	Absolute	With sign
		(1)	(2)	(3)	(4)
Customs	1948-53	29.0	—24.0	9.1	—9.1
	1953-58	11.7	—7.1	6.0	—5.0
Central excise	1948-53	21.3	—7.5	5.8	—3.8
	1953-58	10.0	*	3.0	0.3
Corporation tax	1948-53	24.0	4.5	51.1	51.1
	1953-58	36.1	29.4	40.3	38.9
Personal income tax	1948-53	24.4	—23.0	14.6	—14.6
	1953-58	15.2	—15.2	11.2	—11.2
Sales tax	1948-53	34.2	—34.2	24.7	—22.3
	1953-58	12.1	—12.1	5.3	—5.3
Total revenue	1948-53	22.9	22.9	9.7	—9.5
	1953-58	7.4	—7.4	3.1	—3.1

(*) means negligible. *Source:* Appendix B.

A comparison of the figures for the two periods shows that the errors of estimation are significantly lower in the case of the Budget Estimates of the latter period, except for corporation tax. The quality of the Revised Estimates also has improved.

An Evaluation of Revenue Estimating Practices

In the course of this inquiry, three salient features of the estimates of tax revenues are uniformly observed, except in the case of corporation tax. First, the tax revenues are usually underestimated. Second, the absolute magnitude of error in the Revised Estimates is less than that in the Budget Estimates. And third, the quality of the estimates has improved during recent years. With the estimates of corporation tax, the picture is the reverse. They err more in the direction of overestimation (particularly

the Revised Estimates); the Revised Estimates for corporation tax are less accurate than the Budget Estimates; and finally, the quality of the estimates has deteriorated during the recent years.

This brief analysis reveals clearly that the quality of the estimates of all the taxes is far from satisfactory. It is appreciated that the task of making revenue forecasts is difficult, but the problem is not unique to Pakistan. Rather, there are certain features[11] which render the job relatively easier here. If the extent of error in the British Treasury estimates is no larger than 2 to 3 per cent of the Actuals, it is not clear why the estimates in Pakistan should typically show errors of 15 to 20 per cent (while errors of 50 per cent or more are not totally absent) despite the fact that the tax administration is modelled very much on the British pattern.

In the last analysis, many of the errors have to be attributed to non-adherence of the estimating procedures to developed statistical techniques. To estimate the future level of an aggregate economic magnitude, relevant statistics of variables determining that magnitude and the knowledge of standard methods of extrapolations are needed. More important, however, is a will to use facts to arrive at dispassionate and unbiased estimates. A scrutiny of the departmental set-up and the estimating procedures currently in vogue will be highly rewarding. For, a good estimating system can help not only in knowing in advance the size of the revenues that will in any case come to the public treasury, but also in making the collection more efficient by fixing realistic targets not to be attained without some efforts on the part of the administrators.

II. FLEXIBILITY

A tax structure is considered flexible if its yield increases or decreases more than proportionately in response to an increase or decrease in national income with the tax parameters remaining unchanged. The tax parameters are the statutory limits of the tax base and the rate schedule.

The importance of flexibility as a quality of taxes arises at least for two reasons: first, flexible tax system serves as an automatic stabilizer in the economy; and second, taxes can contribute increasingly in mobilizing public saving in a developing economy — *i.e.*, as income increases, yield from the taxes will expand more than proportionately and, thus, help to plough back an increasing share of the growing national income into further development effort. A measure of flexibility, then, will indicate how far the tax system is likely to perform these two functions. It may also help to

[11] *See* Page 32.

make the estimates of future yield from different taxes more accurate if, from projections of national income, the movement of various tax-yields can be better predicted. The stabilizing influence of the tax system is, however, very insignificant where taxes form a quite small proportion of the national income. The main interest of this paper is in the growth of tax revenues with respect to the growth in national income.

The responsiveness of tax revenues to movements in national income can be measured by the familiar elasticity method[12]. The relative change in tax-yield is divided by the relative change in national income to give a measure of elasticity of taxes (E_T)[13]

$$E_T = \frac{\Delta T/T}{\Delta Y/Y}$$

where

T = tax yield and Y = national income

If the rate schedules of the taxes are not progressive the elasticity of the tax system will be equal to the elasticity of the tax bases: $E_T = E_b$. With progressivity in the rate schedules, the elasticity of the tax system should be more, as E_r will become greater than zero. The elasticity of the tax bases, however, depends upon the relative rate of growth of the taxed sector and its relative sensitivity to general price movements. In Pakistan, the relative growth in the more heavily taxed sector has been much greater than the overall growth. This differential in growth rate becomes still greater if growth of money income alone is considered. In view of these factors plus the progressive nature of the personal income-tax schedule, the Pakistan tax system should show an elasticity of at least 3 to 4 with respect to change in aggregate national income in order to be regarded as reasonably flexible.

Two important difficulties in measuring the responsiveness of taxes to change in income are the elimination of the effects of change in prices and change in tax rates. By using the measure with respect to change in nation-

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12Elasticity and flexibility are used here interchangeably.

13Elasticity of tax revenue to change in national income, prices remaining the same, is the combined effect of elasticity of average statutory tax rates (E_r) and elasticity of tax base (E_b)

where, $E_r = \frac{\Delta r/r}{\Delta b/b}$ and $E_b = \frac{\Delta b/b}{\Delta Y/Y}$

$E_T = E_b (1 + E_r)$

where

r = average rate of tax
b = the tax base (*See*, [5, p. 507]).

al income at current prices, the first of the difficulties is partly overcome[14]. The second difficulty can be removed if hypothetical tax-yields can be calculated by keeping the tax rates equal to that of a particular base year [i,Pp. 171-183; 4].

In this paper, no adjustments are made for differences in tax rates and tax exemption limits to make the work less arduous. The gross elasticities are qualified for the effects of changes in rates, exemption limits and quality of tax administration wherever possible.

Finally, the tax structure is a complex of many taxes of diverse nature. Change in national income will affect the yield of various taxes in a dissimilar manner. The effects of price changes and the nature of rates applied on different taxes are also varied. A flat rate *ad valorem* tax, a specific duty or a progressive rate schedule will make a tax-yield react differently to changes in national income. These considerations make a separate study of the flexibility of individual taxes necessary, especially if the separate effects of changes in levels of the rates and the national income are to be noted. The five major central taxes have been selected for study. Since they constitute almost the entire tax revenue[15], this study will reveal the sensitivity of the total tax structure as well. The elasticity of the total tax revenue to income is also separately obtained.

The elasticities of different taxes, from year to year, with respect to national income at current prices are shown in Table IV.

The year-to-year changes in tax-yield do not show very uniform relationship to changes in income. The randomness may be due to a number of reasons and it is difficult to trace out the exact causes of every movement. First, the movements of different components of national income such as agricultural production, industrial production and levels of exports and imports may not be always in sympathy with changes in national income from year ro year. Second, changes in the rate structure and expansion or contraction of the statutory limits of tax bases also modify the effects of changes in national income on the tax-yield. Third, the correspondence of tax-yields to national income may also be distorted by an alleged policy of tax collection in good years in order to create a reserve of arrears to draw upon during later lean years (as a result the tax-yield does not change by as much as it should in response to a change in national income). Finally, the national-income figures used are likely to suffer from much error of its own.

14The use of current-price national income does not take account of the effects of price change on tax yield *ria* possible changes in demand of the taxed commodities induced by the price change.

15In 1949/50, they formed 78.2 per cent of the total revenue and95.2 per cent of the total tax evenuc. They formed 71,0 per cent of the total revenue and 94.7 per cent of the total tax revenue rini957/58.

TABLE IV

Year	Elasticities[a]					
	Customs	Central excise	Corporation	Personal income	Sales	Total tax revenue
	(1)	(2)	(3)	(4)	(5)	(6)
1950/51	39.1	14.1	*	*	—1.1	31.0
1951/52	0.8	0.9	25.2	11.3	13.5	5.3
1952/53	—4.5	6.1	3.6	3.2	—2.7	—5.0
1953/54	7.8	—12.9	14.0	—2.9	5.1	7.2
1954/55	—1.2	1.0	8.2	—6.2	—1.9	—1.1
1955/56	2.6	1.2	—6.9	—0.7	1.6	1.7
1956/57	—0.5	0.3	—2.5	1.2	0.2	0.2
1957/58	10.1	—18.7	1.9	0.3	—9.9	—5.3

Source: Appendix B.

[a] $\text{Elasticity} = \dfrac{T_t - T_{t-1}}{T_{t-1}} \cdot \dfrac{Y_{t-1}}{Y_t - Y_{t-1}}$

where

T_t = tax yield of the current year.

Y_t = current price national income of the current year.

In the case of corporation tax and personal income tax, a lag of one year has been used because these taxes are levied on previous year's income.

*No estimate of national income is available before 1949/50.

To reduce the chances of being misled by this quagmire of possibilities we consider several other measures. First, we compute the elasticity of tax-yield to income over a longer period, 1949/50 and 1957/58—these being the years just preceding the Korean boom and the martial law, respectively. These elasticities are presented in Column (1) of Table V. Second, we calculate the elasticity of taxes over this period by dividing the period into two parts, namely, 1949/50 through 1952/53 and 1953/54 through 1956/57 and taking the averages of the tax-yields and national income in the two periods. These elasticities are shown in Column (2) of Table V.

The measures of elasticity of tax-yields to national income will reflect the change in yields of taxes corresponding to a change in their more proximate bases as well only if the growth of different sectors or components of the aggregate national income is proportional. In the early stages of development this is often not true. Some sectors develop far more rapidly than others because of more emphasis or more initial potentialities. Relating the receipts of some of the taxes to more specific components of national income will be more meaningful. A tax found highly flexible with respect to aggregate national income may reveal quite poor elasticity when viewed with respect to the phenomenal growth in the sector on which it is levied. We, therefore, have attempted to derive elasticity of taxes to other variables

such as total income assessed in the case of personal income tax, value of foreign trade in the case of customs, index of manufacturing in the case of excise, and so on, which form their proximate bases, respectively. The following paragraphs will be devoted to examining the productivity of each of the taxes under study in the light of the various measures mentioned above.

TABLE V

Tax	Elasticities	
	(1)[a]	(2)[b]
Customs	0.0	—5.5
Central excise	7.7	19.8
Corporation tax	19.7	16.9
Personal income tax	2.9	6.3
Sales tax	2.3	1.6
Total tax revenue	1.6	—0.7

[a]Elasticity =

$$\frac{T_t - T_{t-8}}{T_{t-8}} \cdot \frac{Y_{t-8}}{Y_t - Y_{t-8}}$$

where

T_t = tax-yield in 1957/58

Y_t = national income in 1957/58.

[b]Elasticity =

$$\frac{\sum_{t=5}^{8} T_t - \sum_{t=1}^{4} T_t}{\sum_{t=1}^{4} T_t} \cdot \frac{\sum_{t=1}^{4} Y_t}{\sum_{t=5}^{8} Y_t - \sum_{t=1}^{4} Y_t}$$

where t = 1(1949/50), 2(1950/51)... .....8(1956/57)

T_t = tax-yield of the t-*th* year

Y_t = national income of the t-*th* year.

Customs Receipts: Customs include revenues from export duties and import duties. Almost 70 per cent of customs receipts derive, on the average, from the latter. Given the general level of duties, the total collection from customs will depend upon the volume of foreign trade and its composition.

Foreign trade has become a lagging sector in the economic development of Pakistan. Export earnings are declining relative to the growing national income. Foreign-exchange difficulties, in turn, have led to tight exchange controls and reduced imports. The decline in the importance of foreign trade becomes more pronounced when the proportion of trade financed by foreign aid is excluded. Furthermore, the import policy has increasingly restricted nonessential items, and the composition of imports has changed in favour of duty-free or low-duty essential items. These two factors explain the inflexibility of customs receipts. Except for the years of the Korean boom, the total collection from customs has remained more or less stagnant.

It is in fact useless to look for any automatic flexibility of customs proceeds to national income when exports depend on the capricious movements of foreign demand, domestic supply and permitted imports. In Table V, there is a zero elasticity of customs to national income by one method while it is negative (—5.1) by the second. The negative elasticity is due to the inclusion of the boom years in the average of the earlier period (1949-53). The response of customs is poor even if considered w th respect to change in total foreign trade. In 1957/58, the index of customs receipts showed an increase of 18.4 over the base of 1948/49 and index of foreign trade showed an increase of 38.8 (*see* Appendix D). This inelasticity of customs receipts occurs despite the generally higher level of export and import duties in 1957/58 than in 1948/49.

Central Excise Receipts: Revenue from excise duties has increased enormously and in 1957/58 stood almost four times as high as in 1948/49 (*see*, Appendix D). The Table V elasticities of excise taxes are 7.7 and 19.8. This huge expansion occurred in spite of many reductions in the rates.

This high elasticity is due to rapid growth of manufacturing industries since Partition. The index of manufacturing showed an increase of 304.2 per cent in 1947/58 over the base of 1950/51. Revenue from excise gained 205.9 per cent during the same period. Thus, the elasticity of excise to index of manufacturing is 0.7. The revenue from excise duty has not kept pace with the increase in manufacturing which provides the main excisable items. As economic development is likely to increase the relative share of

industry, the elasticity of excise duty to national income will remain high. It will be required to compensate the loss on import duties with the growth of import-substituting industries within the country.

Persons! Income Tax

This is the most important of the direct taxes and has, in Pakistan, a progressive schedule of rates. Over the period 1948-58, the yield from this source is secularly increasing with the exception of 1953/54 and 1955/56. During these two years, yields from personal income tax were lower by 13 and 8 per cent of their respective preceding year's collection. The post-Korean business recession in 1952/53 and the adverse effects of low agricultural prices in 1954/55 probably explain the exceptions[16].

The total collection of personal income tax in 1957/58 was more than 3.5 times the 1948/49 collection. If we consider 1949/50 level[17] for comparison, the increment is still more than one hundred per cent (113.1 per cent). This set against the increase in national income by 38.7 per cent gives the elasticity of personal income tax as 2.9 (Table V). Alternatively, the elasticity becomes 6.3 if we take the change of average yield and national income between the two periods, 1949-53 and 1953-57.

Even the elasticity of 2.9 must be viewed with qualification. This sensitiveness cannot be considered as an automatic response to national income. Since the disruption of Partition, the quality of tax administration has improved. Furthermore, personal income tax depends mostly upon the faster growing nonagricultural sector[18]. If adjusted for these factors, the elasticity would be much lower. Consider the contributions of manufacturing, government, services and wholesale and retail trade as the relevant elasticity denominator; these have increased in real terms by 47.5 per cent between 1949/50 and 1957/58. Adjusting for an assumed 20-per-cent rise in lie general price level, we get an increase for these sectors of 77 per cent in current prices. O11 the other hand, if we attribute 20 per cent of the increase in tax collection from this source to an improvement in the quality of the tax administration, the elasticity of he income tax to change in the above mentioned base becomes only slightly greater than unity.

16Though agriculture is outside the domain of personal income tax, a huge drop or rise in agricultural prices affects the income in other sectors as well and thus influences the yield of income tax indirectly.

171948/49 was the year immediately after Partition. The poor collection in that year is partially due to the fact that the administrative set-up had not been put in good shape by then. The colled ions of income tax nearly doubled next year, though the exemption limit was raised from 2,500 to 3,000 rupees.

ISAgriculture is outside thejurisdiction of central taxation by constitutional provisions.

This rather poor performance of the only progressive tax may be ascribed to several factors. The exemption limit of personal income tax was raised from 3,000 rupees in 1949/50 to 5,000 rupees in 1957/58. The level of tax rates was slightly lower in 1957/ 58 than that of 1949/50. Moreover, the proportion of total income assessed had declined in the highest income grade (40,000 rupees per annum and over) and had increased in the middle and lower grades[19].

The effects of differences in the tax rates and in the exemption limits can be eliminated by choosing pairs of years with identical tax rates and exemption limits. Table VI shows three such cases[20].

TABLE VI

		Elasticity
(1)	Between 1952/53 and 1953/54	—²-9
(2)	Between 1954/55 and 1955/56	0.7
(3)	Between 1955/56 and 1956/57	1.2

The elasticities in Table VI do not behave uniformly. But they are low on the average.

Another pertinent measure of the elasticity of personal income tax may be with respect to change in total income assessed. Between 1949/50 and 1955/56, total income assessed increased by 20.1 per cent (from 51,63 lac rupees to 61,97 lac rupees) while, income tax receipts increased by 66 per cent. The elasticity becomes 3.3. During the same period, the current-price national income has risen by 7.5 per cent only. This corroborates the fact that growth in the sector covered by personal income tax is higher than the growth in the overall economy and that substantial amount of the early increase in tax yields is due to an improved collection machinery. The elasticity of 3.3 with respect to change in income assessed has to be ascribed to either the progressivity of the tax schedule or a higher level of tax rates or to both. Since the rates in 1955/56 are actually lower compared to those in 1949/50, this indicates a high elasticity of the average rate of personal income tax to a change in its base.

19Between **1949/50 and 1955/56, total income** assessed **in** the **0-9999 rupees income** grade increased from **24** to **27** per cent; that in the **10,000-39,999** rupees income grade it increased from **29** to **31** per cent, and that in the **40,000 rupees-and-over** income grade it decreased from **47** to **42** per cent.

ZOThe elasticity between **1949/50** and **1950/51,** the only other such case, cannot be obtained as no estimate of national income for **1948/49** exists.

To conclude, die yield from personal income tax has increased substantially during 1948/49 to 1957/58. But considering the much higher rate of growth in the sectors covered by income tax, the progressivity in its rate structure and the efforts to improve the collection machinery, the increase in yield must be regarded as low. The low elasticity is observed even when years with identical tax rates are considered. This suggests that total income assessed to income tax has been inelastic compared to the growth in taxable income. The huge declarations of some of the unreported wealth after martial law corroborates this.

Corporation Tax

Corporation tax is levied on the income of all registered companies at a flat rate of 56.25 per cent. Though this is often lumped with personal income tax, it merits separate consideration on account of the dissimilar nature of its base and rate schedule. From a very insignificant initial weight, the corporation tax has increased rapidly during the later years. Table V gives the elasticity of corporation tax to national income as 19.7 and 16.9. The first two years' corporation tax receipts are abnormally low compared to the receipts of the later years. This is due to both the low level of rates and the poverty of large-scale manufacturing during these years. If we leave out the two extreme pairs of years, 1948-50 and 1949-51, between which the receipts almost trebled every year *(see* Appendix D), the elasticity of corporation tax to national income becomes much lower. Between 1950/51 and 1956/57[21] it amounts to 2.6 and between 1950/51 and 1957/58[22] it amounts to 5.9.

The elasticity of corporation tax receipts to the growth of large-scale manufacturing is more modest. Between 1949/50 and 1957/58, the index of large-scale manufacturing (at constant prices) rose by 444.8 per cent and 763.1 per cent more was added to corporation tax receipts. If we exclude the extreme years and consider the period with identical tax rates (1950-57), the tax receipts increased by 98.5 per cent in response to a change of 310.9 per cent in the index of largc-scale manufacturing. The elasticity becomes as low as 0.3. The elasticity will be even lower if effects of price changes are considered. This low elasticity with respect to index of large-scale manufacturing is due in part to the fact that the coverage of corporation tax is not coterminous with large-scale manufacturing. Besides, very liberal exemptions allowed to industries have kept the yield, from this source, low[23].

21The rate of corporation tax was identical during this period.

22The rate of corporation tax applied on corporate income exceeding 25,000 rupees was raised O} 62.50 per cent in 1957/58.

23Many newly established concerns enjoy a tax-holiday during the initial years. They can charge high depreciation allowances on machineries and, thus, reduce the taxable profit. Profits ploughed back also get exemption.

Sales Tax

After customs, sales tax is the most important source of central government revenue. The index of sales tax receipts increased by 247.6 per cent between 1948/49 and 1957/58. Even if the extreme year 1948/49 is excluded, the increase is 68.9 per cent. Table V shows 2.3 and 1.6 as elasticities of sales tax receipts to national income. Enhancement of the rate schedule and coverage contributed to the improvement of sales tax receipts during this period.

The elasticity of sales tax of national income seems to be low on the evidence of recent years. In 1951/52, sales tax receipts reached a peak due to liberal imports and the impact of the new Sales Tax Act of 1951. Since then, the receipts remained below this level through 1956/57[24]. Only in 1957(58 was the level of 1951/52 finally surpassed. Again, the elasticity of sales tax to the index of manufacturing between 1950/51 and 1957/58 is only 0.3. The failure of revenue from sales tax to increase during the later years is partly due to the raising of exemption limits from 15,000 rupees in 1951/52 to 60,000 rupees in 1954/55.

Next, we list in Table VII elasticity of sales tax to national income between pairs of years with same exemption limit and rates:

TABLE VII

		Elasticity
(1)	Between 1952/53 and 1953/54	5-1
(2)	Between 1954/55 and 1955/56	1.6
(3)	Between 1955/56 and 1956/57	0.1
(4)	Between 1956/57 and 1957/58	—9.9
(5)	Between 1954/55 and 1957/58	0.87

In Table VII, case (1) may suggest that sales tax has a high positive elasticity to a fall in national income, given the identical rate and exemption limit. However, case (4) does not confirm the same. The fall in national income in case (1) is accompanied by a sharp decline in the total volume of exports and

[24]This is so despite the fact that the index of national income at current prices is 29.5 per cent higher in 1956/57 than in 1951/52. The collection in 1951/52 was abnormal. A new sales tax act was introduced that year and all the existing stocks were assessed under the old tax.

imports which reduced the yield from the sales tax heavily. But in case (4) the revenue from the sales tax increased in spite of a slight fall in national income because the more relevant components of national income, *viz.*, the volume of imports and domestic manufactures, increased in that year relative to 1956/57.

The relative stagnation of the sales tax revenues after 1951/52 can be explained by the decline in that part of the revenues derived form declining imports and exports. A significant growth of domestic manufactures has occurred but the revenues from this source have no more than compensated for the loss from the other sources.

Total Tax Revenue

The elasticity of the tax system as a whole depends upon the sensitivity of the taxes that comprise it. If most of the taxes, especially the relatively important ones, are inflexible to changes in national income, then the tax system will also suffer from rigidity. Even inelasticity of a single tax may render the tax system inelastic if the importance of that tax is sufficiently large. Customs play such a role in the tax structure of Pakistan.

During the period from 1948/49 to 1957/58, index of total tax revenue reached its peak in 1951/52, though national income reached its peak in 1956/57. This follows from the fact that customs realization reached its peak in 1951/52. Besides, sales tax, as we observed before, showed very high increase in that year under the impact of the new Sales Tax Act.

Between 1949/50 and 1957/58, total tax revenue increased by 61.1 per cent as against an increase of 38.7 per cent in national income. Thus, the flexibility is 1.6[25]. This elasticity must be considered very low because, *i*) during this period, some improvement in the quality of the tax administration and much enhancement of the scope and rates of taxes have occurred; and 2) the growth in national income in the more heavily taxed sector has been much higher than the overall growth in the economy. The latter can be illustrated by taking the sum of manufacturing production, exports, imports, banking and insurance as a measure of taxable national income. Between 1949/50 and 1957/58, this quantity expanded by 90 per cent but tax revenue increased by only 61 per cent[26]. This elasticity is only 0.68. This low response derives from the fact that customs, which contributes the bulk of the total tax revenue, has remained so inflexible. Total tax revenue excluding customs shows an elasticity of 3.6 during the same period.

[25] *See* Table V, Column (2) gives an elasticity of—0.7 for the same period.

[26] Assuming that prices were 20 per cent higher in 1957/58 over those in 1949/50, the constant-price national-income estimate of manufacturing productions has been inflated by 20 per cent.

Measures for **Increasing** the Flexibility of Tax Revenues

The inflexibility of tax revenues noted above is a product of both faulty mechanics of the tax structure and weakness in its administration. Overdependence on customs has kept the tax system tied to a stagnant source. Specific nature of many taxes has made their yields unresponsive to the significant price rises that took place in the economy. Besides, inadequate coverage, loopholes in the design of the rate schedules, indiscriminate exemptions and, finally, outright evasions have militated against the operation of any built-in flexibility.

To restore flexibility actions are required to mitigate all these defects. First, there should be a shift of emphasis from customs to other sources. Though import and export duties must continue to serve the purpose they are currently doing, efforts should be directed, more and more, to make the fast and sturdily growing sectors contribute to tax revenues proportionately. Second, there should be a change over to *ad valorem* duties as opposed to specific duties wherever feasible. Third, the weight and scope of the direct taxes and of the progressive taxes should be increased. Fourth, the time lag between earning of incomes and payment of taxes should be reduced. Finally, dependence on built-in flexibility alone is not enough. Increasing resort to what is known as the policy flexibility is necessary. There should be deliberate legislation of tax measures which will take note of the changing pattern of relative price movements and of relative growth rates among various sectors. The case of several upward revisions of lower exemption limit of personal income tax in Pakistan is an example of actions taken against the dictate of this policy flexibility. Such things should be discontinued. Thus, only a synchronized course of action, both at policy and execution levels, can give the system enough flexibility in order to contribute to the emergence of a productive tax system in Pakistan.

REFERENCES

1. Bretherton, R. F., "The Sensitivity of Taxes to Fluctuations of Trade", *Econometrica,* Vol. V, 1937.

2. Buck, A. E., *The Budget of the Governments of Today.* (New York: The Macmillan Company, 1934).

3. Burkhead, Jesse, *Government Budgeting.* (New York: John Wiley and Sons Inc., 1959).

4. Lakdawala, D.T. and M.V. Khambadkone, "Sensitivity of Central Taxes: 1948-49 to **1954-55",** *The Economic Weekly,* December 5 and 12, **1959.**

5. Musgrave, R.A., *The Theory of Public Finance.* (New York: Mc-Graw Hill, 1959).

6. Pakistan, Central Statistical Office, *Foreign Trade Statistics of Pakistan.* (Karachi: CSO, 1960).

7. Pakistan, Institute of Development) Economics, *A Measure of Inflation in Pakistan,* 1951-60. (Karachi: PIDE March 1961).

8. Pakistan, Ministry of Finance, *Economic Survey and Statistics, Budget* 1961/62. (Karachi: Manager of Publications).

9. Pakistan, Ministry of Finance, *Explanatory Memorandum, Budget* 1960/61. (Karachi: Manager of Publications).

10. Pakistan, State Bank, *Report on Currency and Finance^* 1958/59. (Karachi: State Bank).

11. Sarfaraz, Nighat, *Problems of Budgetary Reform in Pakistan.* (Karachi: Pakistan Institute of Development Economics, 1961).

Appendix A

BUDGET ESTIMATES, REVISED ESTIMATES AND ACTUALS FOR SELECTED TAXES

Heads		1948/49	1949/50	1950/51	1951/52	1952/53	1953/54	1954/55	1955/56	1956/57	1957/58
Customs	Budget estimates	26,45	34,25	38,55	70,78	78,90	39,48	41,06	39,79	52,85	50,84
	Revised estimates	31,20	39,35	82,10	86,10	66,40	41,00	43,45	51,90	47,92	46,54
	Actuals	39,17	46,30	84,34	88,15	70,21	40,10	45,58	61,60	51,59	46,38
Central Excise	Budget estimates	3,70	7,35	6,35	7,00	7,50	13,72	17,92	16,98	17,22	20,98
	Revised estimates	5,20	5,75	6,50	7,25	9,01	16,50	15,56	16,50	17,89	21,03
	Actuals	5,58	5,47	7,09	7,49	9,54	16,31	14,54	16,77	18,28	21,69
Corporation Tax	Budget estimates	48	74	1,30	2,52	3,56	5,14	4,83	6,55	7,19	8,60
	Revised estimates	50	1,16	2,86	4,00	5,73	5,94	6,00	6,86	7,19	8,25
	Actuals	28	74	2,04	3,12	3,79	6,17	3,39	6,02	4,05	6,37
Personal Income Tax	Budget estimates	6,52	8,06	8,20	9,33	11,36	13,11	13,92	17,24	17,69	19,20
	Revised estimates	6,00	7,84	9,64	12,50	14,27	14,41	16,00	16,93	17,81	19,55
	Actuals	6,30	10,82	11,33	14,03	16,74	14,58	19,58	18,05	20,97	23,06
Sales Tax	Budget estimates	3,75	6,50	11,50	15,00	20,23	11,50	17,16	21,40	21,18	26,25
	Revised estimates	3,75	6,00	14,50	25,50	20,23	15,25	18,00	21,34	23,75	25,00
	Actuals	7,71	14,19	13,87	25,10	22,05	15,80	19,12	23,13	24,39	26,80
Total Revenue	Budget estimates	55,54	74,54	88,18	128,12	145,67	115,04	130,17	141,38	153,56	164,16
	Revised estimates	62,65	80,06	137,40	157,79	143,74	125,62	134,47	149,98	154,64	171,88
	Actuals	76,79	98,16	141,17	161,33	152,31	128,52	136,38	166,37	154,99	174,95

Source: Data have been compiled from the Budget documents of the Government of Pakistan for the years 1948/49 through 1959/60 and include the Central allocation to provinces of their share in the taxes.

Appendix B

ANNUAL PERCENTAGE ERRORS OF THE ESTIMATES

Year	Customs		Excise		Corporation tax		Personal income tax		Sales tax		Total revenue	
	BE	RE	BE	RE	BE	RE	BE	RE	BE	RE	BE	RE
1948/49	—32.4	—20.3	—33.7	—6.8	+71.4	78.6	3.5	—4.8	—51.4	—51.4	—27.7	—18.4
1949/50	—26.0	—15.0	34.4	+5.1	0.0	56.8	—25.5	—27.5	—54.2	—57.7	—24.1	—18.4
1950/51	—54.3	—2.7	—10.4	—8.3	—36.3	40.2	—27.6	—14.9	—17.1	+4.5	—37.5	—2.7
1951/52	—19.7	—2.3	—6.5	—3.2	—6.4	28.3	—33.5	—10.9	—40.2	+1.6	—20.8	—2.5
1952/53	+12.4	—5.4	—21.4	—5.6	—6.1	51.2	—32.1	—14.8	—8.3	—8.3	—4.4	—5.6
1953/54	—1.5	+2.2	—15.9	+1.2	—16.7	—3.7	—10.1	—1.2	—27.2	—3.4	—10.5	—2.3
1954/55	—9.9	—4.7	+23.4	+7.0	+42.5	+77.0	—28.9	—18.3	—10.3	—5.9	—4.6	—1.4
1955/56	—35.4	—15.7	+1.3	—1.6	+8.8	+14.0	—4.5	—6.2	—7.4	—7.7	—15.0	—9.9
1956/57	+1.9	—7.1	—5.8	—2.1	+77.5	+77.5	—15.6	—15.1	—13.2	—2.6	—0.9	—0.2
1957/58	+9.6	+0.3	—3.3	—3.0	+35.0	+29.5	—16.7	—15.2	—2.1	—6.7	—6.2	—1.8
With Signs:												
Average of 1st 5 years	—24.0	—9.1	—7.5	—3.8	+4.5	+51.1	—23.0	—14.6	—34.2	—22.3	—22.9	—9.5
Average of last 5 years	—7.1	—5.0	*	+0.3	+29.4	+38.9	—15.2	—11.2	—12.1	—5.3	—7.4	—3.1
Average of whole period	—15.5	—7.1	—3.8	—1.7	+17.0	+44.9	—19.1	—12.9	—23.1	—13.8	—15.2	—6.3
Absolute (without signs):												
Average of 1st 5 years	29.0	9.1	21.3	5.8	24.0	51.1	24.4	14.6	34.2	24.7	22.9	9.5
Average of last 5 years	11.7	6.0	10.0	3.0	36.1	40.3	15.2	11.2	12.1	5.3	7.4	3.1
Average of whole period	20.3	7.6	15.6	4.4	30.1	45.7	19.8	12.9	23.1	15.0	15.2	6.3

(*)means negligible.

Source: Appendix A

Appendix C

CHANGES IN BUDGET ESTIMATES

The changes in the Budget Estimates between two years and the error of the previous year's Budget Estimates seem to be closely related. This Appendix measures the strength of this relationship.

We hypothesize that the change in the Budget Estimate (as a per cent of the previous year's Actuals) is equal to a constant, different according to the tax being estimated, less a fraction of the percentage error in the previous year's Budget Estimate. In equation form,

$$\left[\frac{B_t - B_{t-1}}{A_{t-1}}\right] = a_i + b\left[\frac{B_{t-1} - A_{t-1}}{A_{t-1}}\right] \quad \ldots\ldots\ldots\ldots (1)$$

where

B_t = Budget Estimate in t-*th* year.

A_t = Actual receipts in t-*th* year.

a_i and b are coefficients, the former depending upon the tax (i) involved.

Rearranging terms and adding a random error term, we have

$$\frac{B_t}{A_{t-1}} = (a_i - b) + (1 + b)\frac{B_{t-1}}{A_{t-1}} + U_t \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

The coefficients are estimated, by least squares, from the sample of 45 observations, nine for each of the five taxes. These estimates are:

$$\left[\frac{B_t - B_{t-1}}{A_{t-1}}\right] = \left\{\begin{array}{c} -.02 \text{ for customs} \\ .19 \text{ for excise} \\ .03 \text{ for pesonal income} \\ .48 \text{ for crop} \\ .08 \text{ for sales} \end{array}\right\} - .33\left[\frac{B_{t-1} - A_{t-1}}{A_{t-1}}\right] \ldots (3)$$

About two-thirds of the variation of the dependent variable, B_t/A_{t-1} is explained by the regression.

Both the use of a separate intercept for each type of tax (a_i) and the regression coefficient (b) add significantly to the explanation.

Sums of squares	Amount	Degrees of freedom	F-ratio
of deviations around mean ..	6.83	44	
explained by a_i ..	3.39	4	$\frac{3.39/4}{3.44/40} = 9.87^*$
of deviation around a_i ..	3.44	40	
explained by b ..	1.09	1	$\frac{1.09/1}{2.35/39} = 18.03^*$
of deviations around b ..	2.35	39	

$$R^2 = 1 - \frac{2.35}{6.83} = .66$$

*Significant at 1-per-cent level.

As can be seen from the above table, almost half the original variance is explained by computing a separate mean for each type of tax. Almost a third of the remaining variance is explained by considering the influence of last year's budget errors on this year's estimates.

Appendix D

INDICES OF TAX RECEIPTS AND SOME RELATED ECONOMIC INDICATORS

Year	Index of customs receipts	Index of excise duty receipts	Index of personal income tax	Index of corporation tax receipts	Index of sales tax receipts	Index of total tax receipts	Index of national income at current prices	Index of manufacturing	Index of large-scale manufacturing	Index of foreign trade
1948/49	100.0	100.0	100.0	13.7	100.0	100.0	—	—	—	100.0
1949/50	118.2	98.0	171.7	36.3	184.0	127.4	100.0	—	100.0	119.4
1950/51	215.3	127.1	179.8	100.0	179.9	192.6	102.1	100.0	125.2	110.6
1951/52	225.0	134.2	222.7	152.9	325.6	225.1	108.2	123.6	156.4	162.9
1952/53	179.2	171.0	265.7	285.8	286.0	201.3	113.0	155.4	200.0	144.2
1953/54	102.4	292.3	231.4	302.5	204.9	156.6	106.8	202.4	293.6	97.9
1954/55	116.4	260.0	310.8	166.2	248.0	170.2	94.8	265.3	356.0	85.9
1955/56	157.3	300.5	286.5	295.1	300.0	192.7	107.5	336.6	456.8	97.2
1956/57	131.7	327.6	332.9	198.5	316.3	197.9	140.1	381.7	514.4	135.2
1957/58	118.4	388.7	366.0	312.3	347.6	205.3	138.7	404.2	544.8	138.8

Source:
1. Tax receipts: from [9, Pp. 172–173 and 181].
2. Index of large-scale manufacturing: from [8, p.1].
3. Index of manufacturing: from [10, p. 93].
4. Index of current price national income: from [7, p. 21] and C.S.O. estimates through 1953/54.
5. Figures for foreign trade are taken from [6, p.1].

Domestic Resources and Fiscal Policy in Pakistan's Second and Third Plans

Stephen R. Lewis, JR.

This chapter originally appeared as an article in the Autumn-1965 issue of *The Pakistan Development Review* and is the result of research carried out in 1965 when the author was a Research Advisor at the Pakistan Institute of Development Economics. Bruce Glassburner's comments were helpful in improving the style and content of the paper.

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Domestic Resources and Fiscal Policy in Pakistan's Second and Third Plans

Stephen R. Lewis, Jr.

INTRODUCTION

Pakistan is now widely regarded as a successful case of movement towards self-sustaining economic growth. If one lets it become known that he has spent some time in Pakistan, other economists immediately want to know: What happened? What were the "real" causes? Is the success a mirage? How long will it last? An attitude of enthusiasm is a sharp contrast to the air of pessimism and prevailed as recently as two years ago. The notes here are not an attempt to establish what has happened to Pakistan's economy, or why it happened now and not five years ago. The aim is much more modest, but may have some bearing on the larger question. My primary interest is in examining certain aspects of government policy in general and fiscal policy in particular, excluding policy on government expenditures. I shall not be concerned with Plan allocations and government outlays.

In the macroeconomic framework of Pakistan's plans, present investment is the only determinant of future output. The problem of "mobilizing" resources is one of finding offsets to investment expenditure from either domestic or foreign sources. The *Third Plan* states that "the main task in the Perspective Plan will be to institutionalise the growth process and to finance

it increasingly from domestic resources" [15, p. 20]. The "domestic resources" with which the Plan is primarily concerned are domestic saving (to offset investment) and exports (to pay for imports). A related variable not treated in the discussion of the Perspective Plan is taxation which is necessary to offset government expenditure on current and capital accounts. In order to reduce and eventually eliminate foreign assistance while maintaining or increasing the proportion of income invested, domestic saving must increase more rapidly than investment, taxation must increase more rapidly than government current and capital expenditures and exports must increase more rapidly than imports, since foreign assistance now offsets a large proportion of investment, government expenditure and imports.

The impact of government policy on the domestic efforts to "finance" economic growth (*i.e.*, investment and imports) can be thought of at macroeconomic and microeconomic levels. At the macro level, policy affects directly the level of taxation and the level of government saving, and it indirectly affects the level of private saving through taxation of groups with different marginal propensities to save. Macroeconomic policy can also be used to reduce domestic-resource uses (presumably consumption) and provide greater export surpluses. At the micro level, government policy can operate through the price system to affect decisions of investors and manufacturers: *i*) about the use of domestic or imported capital goods and raw materials; and *ii*) about production for home or foreign markets. Government policy can also presumably affect the allocation of income between saving and consumption. I will limit comments in this paper to the levels, the movements and the composition (or sources) of domestic saving, taxes and exports in the past and those that are projected and I shall try to indicate the impact of government policies on these variables. Since other contributors to this series of articles are discussing the balance of payments in greater detail, I have given less attention to the macroeconomic aspects of export performance and projections. The following section gives a summary of macroeconomic developments in the First and Second Plans and the projections for the Third Plan along with some comments on measurement and interpretive problems. The general aims, attitudes and performance of the government in the three Plans are discussed in Section II which is primarily concerned with microeconomic aspects of fiscal policy in the Plan documents and the *Evaluation Report* [13] of the Second Plan. There is an Appendix to the paper on aggregate economic statistics in Pakistan and the recent revisions in them.

II. PAST PERFORMANCE AND PROJECTIONS OF KEY AGGREGATES

The critical assumption in the Third Plan is that the economy would continue to save and reinvest roughly 22 per cent of the additional

income generated during the Plan period [15, Chapter V, para 5][1].

The balance of payments projections and the numerous explicit and implicit policies on which they depend, constitute one of the most crucial elements of the Third Plan [15, Chapter VI, Jpdfd II.

Despite the "critical" or "crucial" role played by the projections of saving, imports and exports for the implicit *third-plan* model, these projections, particularly of saving, have less basis in detailed empirical analysis than the key programmes in specific sectors, such as agriculture or manufacturing industry. One of the curious and interesting features of the second-plan period is the relatively smooth behaviour of most important aggregates on a year-to-year basis. This phenomenon is called a "firmness in the growth rate" in Planning-Commission publications and, while one hopes it will continue, one should not forget: *i)* that 1962/63 was the only year of the five during the Plan that saw any severe downward fluctuations in agricultural output due to weather; and *ii)* that there was a continual rise in the aid-financed current-account deficit in the balance of payments and in imports. A combination of good luck and good management produced extremely uniform growth beginning in 1959/60. I think it is fair to say that such behaviour of aggregate statistics is unusual and that one must be exceedingly careful in drawing conclusions that are too strong on the basis of four or five years' experience.

To illustrate the need for care in choosing benchmarks or in fixing coefficients, I have recalculated some of the average and marginal rates of saving and taxation for the past and those projected for the future to compare the conclusions drawn from the most recent five years taken alone with those drawn from other bases. I have tried hard to get figures comparable to those used in the Planning-Commission documents, though this is extremely difficult for a number of reasons[2]. The exercise follows in the next three subsections.

1The *Evaluation Report* says that 22 per cent was chosen because it was the "trend in the marginal rate of savings over the entire [Second] Plan period" [13, p. 7]. It is not clear from the *Evaluation Report* whether this statement means the MRS is the ratio of the differences in the trend values of saving and income from 1959/60 to 1964/65 or the trend value of annual marginal rates of saving or something else. The reader should note that Third Plan or Second Plan when italicized refers to the document, rather than this Plan period.

2The concept of investment differs from that of development expenditure: there are larger and unexplained differences in the figures from the *Evaluation Report* [13] published in March 1965 and the *Third Plan* [15] published in May 1965, for several key items; sometimes current prices are used, sometimes constant prices, and only occasionally is the source of the deflator given; the changed procedure for estimating imports, investment, GNP (and, therefore, saving and saving ratios) is not explained for the early years covered in Chapter I of the *Third Plan* "Review of Planned Development"; Indus Basin imports and investment, and PL-480 imports are included in some places and excluded in others. One could go on, I have attached an Appendix for those who are interested in a brief introduction to problems of using the available historical statistics in Pakistan.

Saving Rates

Table I contains in its upper panel a revised form of saving rates on an annual basis, along with the marginal rates between years, for the final years of the pre-Plan period and the three Plan periods. There is a difference between my Table I and Table 7 of the *Third Plan* [15, Chapter I] in that the *Third Plan* shows a decline in the rate of saving from 1954/55 to 1959/60

TABLE I

SUMMARY OF SAVING-RATE DATA IN CURRENT PRICES

Saving Ratios, Annual Basis

(in million rupees)

	1954/55	1959/60	1964/65	1969/70
GNP at market price	21,920	32,705	45,541	62,765
GDS	1,463	2,320	4,608	8,515
GDS÷GNP	6.7%	7.1%	10.2%	13.6%
△GNP÷ △GDS		7.9%	17.8%	22.6%

Sources: 1954/55: GNP from [8, April 1965], adjusted for indirect taxes. GDS from [15], converted to current prices by [18, Index].
1959/60, 1964/65, from [13].
1969/70, from [15, Table 1, p. 62].

Saving Ratios, Five-Year Basis

	First Plan		Second Plan	Third Plan
	A	B		
GNP at market prices	117,590	142,187	202,304	275,960
GDS	8,420	10,181	17,864	36,500
GDS÷GNP	7.2%	7.2%	8.9%	13.2%
△GDS÷ △GNP			12.8%	26.1%

Sources: First Plan: Estimate A, from [5] since new investment estimates corresponding to new GNP estimates are not available. Rate of saving from estimate A was applied to new GNP estimates to obtain first-plan saving at the new GNP rates. New GNP and new saving were used to calculate the marginal rate from the First to the Second Plan.
Second Plan: from [13, p. 6].
Third Plan: GNP from [15] by applying growth rate to 1964/65; GDS from [15] calculated as Plan size minus external resources.

while here there is a rise[3]. The saving figure given in the *Third Plan* for 1959/60 is lower than that in the *Evaluation Report* [13] but the difference is unexplained. The lower *third-plan* estimate of 1959/60 saving means a lower marginal rate from 1954/55 to 1959/60 and a higher marginal rate of saving from 1959/60 to 1964/65 than shown here.

The principal differences among various average and marginal saving figures, however, come from an examination of the average rates of saving over the entire Plan periods and the marginal rates *between* Plan periods, as shown in the lower panel of Table I[4]. Here one sees that the MRS *from* the first- *to* the second-plan period was not 22 per cent but less than 13 per cent, and that the marginal rate from the second- to the third-plan period is, again, not 22 per cent but 26 per cent. It is of course very easy to say the difference is due to the fact that there is an *acceleration* of the growth rate and the saving rate and, therefore, calculations made by taking averages will give different results than those made by taking end points, which is true enough. The problem is, however, first, that we are presumably dealing with a real economy, not with a mathematical function, and second, that the very acceleration in growth rates of GNP, investment and, particularly, imports that took place between 1959/60 and 1964/65 probably had an effect on the rate of saving that will not be repeated when the growth rates of these variables level out, as they are in fact expected to do in the third-plan period. Thus, the choice of a 22-per-cent MRS for the Third Plan is, in an important sense, not a continuation of past performance. The somewhat arbitrary choice of the value of "the critical assumption" is not in keeping with the high levels of analytical ability and sophistication that have come more and more to characterize the work of the Planning Commission. The disregard for *any* kind of "saving function" when much of the rest of the aggregate framework of the plan is apparently based on fairly complex functional relationship is quite distressing. There is no way of truly evaluating whether the saving goal is too high, given the economic relationships and behaviour of various sectors of the economy, or whether it is too low. But the assumed goal is *not,* as is stated, simply that things will continue as they have been going.

Unfortunately, there exists at present no comprehensive study of saving in the economy by sectors. Aggregate domestic saving is computed by deducting some measure of the balance-of-payments deficit (the one chosen varies from time to time) from the estimated level of gross investment (the estimates of which change from time to time). Some preliminary estimates of noncorporate private saving were made two years ago by the

3The *third-plan* figures are in constant prices, mine are in current prices. For a discussion of current and constant-price investment and saving estimates, *see* Appendix.

4The reader should refer to Table 1 footnote and to the Appendix for the sources and procedure* of estimating saving.

Pakistan Institute of Development Economics [5] but these have not been kept up-to-date nor have they been refined at all. There are some hit-or-miss estimates of private and public saving (with vague definitions, usually not corresponding to those of other countries) made in the Planning-Commission documents[5]. One of the problems of getting at a meaningful saving function, therefore, is to find some good empirical estimates of conceptually appropriate variables.

I have prepared some rough estimates of gross private and public saving on an annual and a five-year average basis. Public saving is here taken as identical to "surplus on revenue account", as given in the Planning-Commission documents. Such a concept comes very close to an "income less consumption expenditure" notion of saving that we apply to other sectors of the economy. Public saving is deducted from gross domestic saving to get gross private domestic saving (GPDS). The measure of private incomes used here, which is not, I think, too inappropriate, is found by deducting direct taxes from GNP at factor cost. That measure is called "gross disposable national income" (GDNI) in Tables II and III.

As in the case of total gross saving, the rate of private saving shows different behaviour if one measures the marginal rate between 1959/60 and 1964/65 from that when one measures the marginal rate from the First Plan to the Second Plan. If one uses the estimates of public and private saving assuming the implementation of additional tax measures (which I argue later is the more plausible assumption), the marginal rate of private saving projected from 1964/65 to 1969/70 is only one-third higher than the marginal rate from 1959/60 to 1964/65, while the marginal rate from the Second Plan to the Third Plan is more than twice the marginal rate from the First Plan to the Second Plan. Again, while such a phenomenon *might* be consistent with the structural and behavioural relationships in Pakistan, it also might not be.

The lack of specification of functional or behavioural saving relations in the *Third Plan* and its supplementary documents was noted above. One example of the results of not specifying the relationships properly is related to the problem of additional taxation. The "Resources and Financing" chapter of the *Third Plan* [15] discusses government revenue projections: *i*) under the assumption that rates will not change; and *ii*) on the assumption that there will be 3000 million rupees of additional taxation over the five years (or 900 million rupees in 1969/70). These two alternatives are discussed without specifying the effect on private saving. That is, if taxation is increased by 3000 million rupees, government expenditures on revenue

[5] *See* [11] for examples.

TABLE II

GROSS PRIVATE SAVING AND PUBLIC SAVING RATES — ALTERNATIVE MEASURES (CURRENT PRICES)

(in million rupees)

	Annual basis				Plan averages			
	1959/60	1964/65	1969/70	1969/70[a]	First Plan	Second Plan	Third Plan	Third Plan[b]
GNP at market price	32,705	45,540	62,765	62,765	142,187	202,304	275,960	275,960
GNP at factor cost	31,439	43,365	59,400	59,400	137,113	193,392	262,925	262,925
Direct taxes	603	940	1,322	1,540	2,517	4,464	5,748	6,975
GDNI	30,836	42,425	58,078	57,860	134,596	188,928	257,177	255,950
GDS	2,320	4,608	8,515	8,515	10,281	17,864	36,500	36,500
Revenue surplus	30	1,092	2,070	2,970	150	3,963	8,600	11,600
GPDS	2,290	3,516	6,445	5,545	10,031	13,901	27,900	24,900
GPDS ÷ GDNI	7.4%	8.3%	11.1%	9.6%	7.4%	7.4%	10.8%	9.7%
△GPDS ÷ △GDNI		10.6%	18.6%	13.1%		7.1%	20.5%	16.4%
Revenue surplus ÷ GNP	0.1%	2.4%	3.3%	4.7%	0.1%	2.0%	3.1%	4.2%

[a]Including additional taxation.

[b]Share of direct taxes in additional taxes taken to be the same as the share in 1964/65.

Sources: GNP at market price: *see* Table I.

GNP at factor cost: 1959/60, 1964/65, 1969/70 [15].
First Plan: [8, April 1965].
Second Plan: [13].
Third Plan: [15].

GDS *see* Table I.

Revenue surplus: 1959/60 and 1969/70 from [15] and 1964/65 from [13].
Note again difference from *Plan* figures. First Plan taken as 1959/60 level for all years probably overstates revenue surplus and, therefore, understates private savings.

Direct taxes: 1959/60 and First Plan from [9].
1964/65 and Second Plan from [13].
1969/70 and Third Plan from [15].

account do not change, but neither do private consumption expenditures since total saving remains the same. Therefore, the private marginal rate of saving out of taxed income is 100 per cent. Since this is clearly implausible, it is not at all obvious why the *Third Plan* makes so much of the problem of raising additional revenue. If the saving target is to be reached without additional taxation, the marginal private rate of saving would have to be 18.6 per cent from 1964/65 to 1969/70, or it would have to be 20.5 per cent from the Second Plan to the Third Plan. The latter is almost three times the marginal rate from the First Plan to the Second Plan. It is quite obvious that the 3000 million rupees of additional taxation is absolutely necessary if the *third-plan* saving targets are to be achieved.

TABLE III

AVERAGE AND MARGINAL RATES OF PRIVATE AND TOTAL GROSS DOMESTIC SAVING: 1959 TO 1965

(in million rupees; current prices)

	1959/60	1960/61	1961/62	1962/63	1963/64	1964/65
GNP at factor cost	31,439	34,622	36,192	38,258	40,955	43,365
GNP at market price	32,705	36,112	37,759	39,931	42,961	45,541
Direct taxes	603	623	720	725	853	940
GDNI	30,836	33,999	35,472	37,533	40,102	42,425
GPDS	2,290	1,690	2,335	3,100	3,314	3,516
Public saving	30	521	750	728	818	1,092
GDS	2,320	2,211	3,085	3,828	4,132	4,608
GDS÷GNP at market price	7.1%	6.1%	8.2%	9.6%	9.6%	10.2%
GPDS÷GDNI	7.4%	5.0%	6.6%	8.2%	8.2%	8.3%
Public saving÷GNP at market price	0.1%	1.4%	2.0%	1.8%	1.9%	2.4%

	Three-year averages		Two-year averages		
	1959-62	1962-65	1959-61	1961-63	1963-65
GDS÷GNP at market price	7.1%	9.7%	6.6%	8.9%	9.9%
ΔGDS/ΔGNP at market price	22.6%		26.9%	16.8%	
GPDS÷GDNI	6.3%	8.2%	6.1%	7.4%	8.3%
ΔGPDS÷ΔGDNI	18.2%		17.8%	14.6%	

Sources: GNP at factor cost [13, p. 6].
GNP at market prices [13, p. 6].
Direct taxes: 1959/60 [9].
1960/61 to 1964/65 [13, p. 107].
GDNI: GNP at factor cost minus direct taxes.
Public saving (revenue surplus): 1959/60 [15, p. 67]; 1960/61 to 1964/65 [13, p. 107].

In Table III, I have given the annual figures for total and for public and private saving as well as some average and marginal rates of total and private saving for the period 1959/60 to 1964/65. Despite the danger of looking at short time periods, it is interesting to note that the rate of private saving (GPDS) out of gross disposable national income (GDNI) has remained virtually constant for the past three years despite the rapid growth of imports, industrial production and agricultural output. Looking at the marginal rates from the first three years to the last three years, one sees again that the private rate is below the total rate due to the rapid growth of public saving over the past five years. The marginal rates from 1959-61 to 1961-63 are much higher than those from 1961-63 to 1963-65. These figures point up again the fairly substantial difference between the first three years and the last three years of the six presented or, if one likes, between the first two and the last three years of the Second Plan. It is not at all clear which of the variety of "marginal rates of saving" is the appropriate one to use for projections into the next five years[6].

Tax Ratios

While government policy cannot specify what the rate of saving out of income will be, it can have a good deal of influence on saving rates through adjustments in taxation and in public saving. On the matter of taxation, the government of Pakistan deserves high marks for its aggregate performance over the past five years, as opposed to the fairly poor performance of tax revenue during the first-plan period. Table IV represents the relevant aggregate figures. The behaviour of the average of marginal ratios of tax and total revenue to GNP presents a marked contrast to those of the saving ratios. Both the MRS and the marginal rate of taxation (MRT) are low when measured from 1954/55 to 1959/60, and both are much higher over the years from 1959/60 to 1964/65. The difference in the behaviour of the MRS and MRT is in the projections for the third-plan period. Looking

6There is a troublesome point related to estimates of public saving and to government revenue for the Second Plan, particularly 1964/65. The figures for tax and nontax revenue and for total current expenditure for 1964/65 differ greatly between the *Evaluation Report* of March 1965 and the *Third Plan* of May 1965 with the result that the public-saving figure for 1964/65 in the *Evaluation Report* is 290 million rupees smaller than that given in the *Third Plan:* expenditures arc lower by 564 million rupees and revenue by only 274 million rupees. Total saving for 1964/65 is the same in both documents, however, so that the estimate for 1964/65 private saving is 290 million rupees lower in the *Third Plan* than in the *Evaluation Report* which, if true, would make the private-saving ratio lower in 1964/65 than in 1963/64. Such a conclusion is difficult to explain if the impact of import liberalization on private incomes in the industrial sector was as great as it was expected to be. More problematic in some ways is that the estimate for public saving or revenue surplus for the whole second-plan period is unchanged from the *Evaluation Report* to the *Third Plan.* There must, therefore, have been an equal but offsetting decrease in the estimate of public saving for earlier years which implies in turn an upward adjustment of the private-saving amounts and ratios for earlier years and a larger fall in the ratio of private saving to disposable national income in 1964/65. These points cannot be cleared up since the *Third Plan* does not give the surplus or saving estimates for the earlier years of the Second Plan. The problem of discovering a stable relationship of saving to income in total or by sectors becomes even more difficult.

first at the 1964/65 to 1969/70 projections, the implied MRT, even under the "additional tax" assumption, is lower than the rate from 1959/60 to 1964/65, while under the assumption of continued present rates the MRT is virtually the same as the average rate for 1964/65. The situation is a bit better when one looks at the Plan-period averages which are presented in the lower panel of Table IV. Here one sees that proposed MRT from the second-plan period to the third-plan period is about the same as the MRT from the First to the Second Plan on the low-tax assumption, and four percentage points higher for the higher-tax assumption. Here, then, is one answer to the problem mentioned above about the apparently excessive role given to private saving over the third-plan period. By assuming an inappropriately high MRS for the economy as a whole and by slowing

TABLE IV

SUMMARY OF TAX BEHAVIOUR (CURRENT PRICES)

Ratios of Taxes to GNP, Annual Basis

(in million rupees)

	1954/55	1959/60	1964/65	1969/70 at 1964/65 rates	1969/70 at new rates
Tax revenue	1,304	2,000	3,981	5,580	6,480
Total revenue	1,879	2,640	5,094	7,250	8,150
GNP at market price	21,920	32,705	45,540	62,765	62,765
Tax revenue/GNP	5.9%	6.2%	8.4%	8.9%	10.3%
Marginal tax rate	6.5%	15.4%		9.3%	14.4%
Total revenue/GNP	8.6%	8.2%	11.2%	11.6%	13.0%
Marginal revenue rate (MRT)	7.1%	19.2%		12.5%	17.6%

Sources: 1959/60, 1964/65 and 1969/70 from [13]; 1954/55 revenue data from [9]; GNP from [8, April 1965], adjusted for indirect taxes to get GNP at market price.

Alternative Calculation of Tax Ratios

	First Plan	Second Plan	Third Plan 1694/65 rates	Third Plan new rates
Tax revenue	8,817	15,724	24,631	27,631
Total revenue	12,486	20,966	31,355	34,355
GNP at market price	142,187	202,304	275,960	275,960
Tax revenue/GNP	5.9%	7.8%	8.9%	10.0%
Marginal tax rate	11.5%	12.1%	16.2%	
Total revenue/GNP	8.8%	10.3%	11.4%	12.5%
Marginal revenue rate (MRT)	14.0%	14.0%	18.2%	

Sources: First Plan : GNP [8, April 1965] adjusted to market price by indirect taxes.
Taxes : [9].
Second Plan: GNP and Taxes [13].
Third Plan : GNP and Taxes [15].

down the tax and public-saving efforts that were accelerated over the second-plan period, the private sector received, as a residual, a very steep acceleration of projected performance in the third-plan period. If there is anything at all significant about the stability of the private MRS over the past three years accompanied by large increases in private-sector incomes, the implicit MRS of the private sector in the *Third Plan* may be unrealistically high for the third-plan period, even under the "high-tax" assumption.

The line of criticism or comment, spelled out above, does not mean that I favour lowering Pakistan's sights for the third-plan period. What I have tried to do is to indicate that the set of assumptions and projections for aggregate saving does not seem to be reasonable when one looks at past performance and at the components, or as near as one can get to components, of past saving. In particular, the effort to be made in the public sector is projected to be weak despite the potential for additional taxation out of rapidly rising income in sectors like agriculture. The *Third Plan* notes that the potential for additional tax contributions from the agricultural sector now exists but there are no specific proposals for realizing more revenues[7].

Import and Export Ratios

In order to have a complete and comparable set of data for the micro-economic variables of concern here, Table V gives the marginal and average ratios of imports and exports to GNP for the last years of each five-year period and the average for the three Plan periods. The foreign trade relationships are in general more consistent with the interpretations and assumptions stated in the *Evaluation Report* [13] and in the *Third Plan* [15] than those of either saving or taxes. They show the stagnation of exports and the slow growth of imports during the first-plan period, the pick-up in growth of exports during the Second Plan (and from the first- to the second-plan period) as well as the tremendous acceleration in imports during the Second Plan that accompanied the foreign-financed "import-liberalization" programme of the past five years. One can also see die further acceleration in exports that is expected during the third-plan period.

The rapid decrease in the marginal rate of imports from 25.5 per cent over 1959/60 to 1964/65 to 9.2 per cent from 1964/65 to 1969/70 may be too much to expect, since it implies: *i)* a very sharp deceleration in imports; *ii)* a marginal import ratio only slightly above that during the First Plan; and

7While total revenue will rise 60 per cent under the *Third Plan's* **high-tax assumption, land taxes would rise only 16 per cent if they kept the same share in the increase that they had in total revenue** in **1964/65, despite a projected increase in value added in agriculture of between 25 and 30 per cent.**

iii) a marginal rate that is lower than the average. Even with a very substantial programme of import substitution, such a ratio may be unrealistically low. The *Third Plan* [15] does expect the import ratio to be higher for the entire third-plan period than it was for the second-plan period, but the deceleration appears to be extremely rapid in the last few years of the Third Plan. The acceleration in exports from the second- to the third-plan period does not seem too great. The marginal export rate, however, accelerates quite a bit from 1964/65 to 1969/70 compared to the rate from 1959/60 to 1964/65 when the average ratio of exports to GNP fell.

TABLE V

AVERAGE AND MRGINAL RATIOS OF EXPORTS AND IMPORTS TO GNP

(*in million rupees; current prices*)

	1954/55	1959/60	1964/65	1969/70	First Plan	Second Plan	Third Plan
Imports of goods (M)	1,558	2,461	5,740	7,336	9,749	20,953	32,520
Exports of goods (X)	1,760	1,843	2,520	4,120	7,982	10,987	16,840
GNP at market prices	21,920	32,705	45,540	62,765	142,187	202,304	275,960
M/GNP	7.1%	7.5%	12.6%	11.7%	6.8%	10.4%	11.8%
X/GNP	8.0%	5.7%	5.5%	6.6%	5.6%	5.4%	6.1%
$\Delta M/\Delta GNP$		8.4%	25.5%	9.2%		18.6%	15.8%
$\Delta X/\Delta GNP$		0.8%	5.2%	9.3%		5.0%	7.9%

Note: Imports and exports for 1954/55 were adjusted upward to reflect the devaluation of rupee in August 1955. If the adjustment is not made, the marginal rates from 1954/55 to 1959/60 are unrealistically high. In addition, invisibles have been excluded from all figures which, therefore, represent imports and exports of goods only.

Sources: Imports: 1954/55 [8, April 1965, p. 829].
1964/65 [13, p. 115].
1969/70 [15, p. 98], adjusted for PL-480 and Indus-Basin imports.

Exports: 1954/55, 1959/60 [8, April 1965, p. 829].
1964/65, 1969/70, [15, p. 84].
First Plan [8, April 1965, p. 829].
Second Plan [13, p. 117].
Third Plan [15, p. 98], exports adjusted to goods only by deducting 15 per cent for invisibles, the average of 1964/65 and 1969/70.

One measure of successful fiscal policy that would show up in fairly aggregate terms is the effect on exports. Although the rate of growth of export earnings was quite a bit higher than was anticipated, so was the rate of growth of GNP. We are told in [13] that "fiscal policies, particularly taxation measures, helped in curbing consumption and diverting a larger

proportion of increased production into the export market". Evidence that this was the case would presumably be a marginal export rate that was above the average. Such was not the case, however, as the ratio of exports to GNP fell regardless of whether one compares 1959/60 with 1964/65 or the First Plan with the Second Plan.

III. ASPECT OF PAST AND PROJECTED FISCAL POLICY

Tax Proposals

The growth in government tax revenue over the second-plan period has, as noted, been quite satisfactory and represented a substantial break with the past. Important steps were taken both: *i)* in raising the levels of tax rates to absorb more private resources; and *ii)* in the direction most tax rises took. Table VI gives the projected and actual 1964/65 revenue by major revenue heads, though unfortunately the *Second Plan,* like the *Third Plan,* does not tell the amount by which taxes would be increased to reach the targets for new taxation. Conspicuous in its failure to meet even the target at the old rates of tax were taxes on agricultural land. This failure is even more important in view of: *i)* the extended discussion in the *Second Plan* of the need to raise revenue from agriculture; and *ii)* the greater-than-anticipated increases in agricultural incomes over the *second-plan* period. In addition, income and corporation taxes did not rise as rapidly as indirect taxesi on imported and domestically produced goods. As a result, the share of d rect taxes in total revenue fell over the period. While such a movement, particularly over a short period, is not necessarily bad, the time must soon come to start raising the share of direct taxes as a concomitant of establishing a flexible, income-elastic and relatively more equitable tax system that will adjust to a rapidly industrializing and urbanizing economy. In view of this need, the projected fall of the share of direct taxes in the *Third Plan* from 26 per cent in 1964/65 to less than 24 per cent of total taxes in 1969/70 is not encouraging. Improvements in the means of imposing relatively equitable income-elastic taxes in the agricultural sector command even greater urgency than they did in 1960.

The *direction* of indirect tax changes over the second-plan period was in general an encouraging one. Since many of the changes that were enacted were in fact recommended by the *Second Plan,* the trend is even more important. The *second-plan* period marked the ascendancy of the Planning Commission to a high place in the determination of economic policy. Indeed I would argue that it was as a framework for policy rather than as a blueprint for expenditure that the Plan was most successful, though support for that statement is beyond the scope of the present paper. A review of second-plan tax proposals and their implementation will illustrate the general success in getting policies adopted.

TABLE VI

GROWTH OF TAX REVENUE: PROJECTED AND ACTUAL

	Second-Plan projections 1964/65 at 1959/60 rates	1964/65 estimates from Third Plan	Ratio actual to projected
Income and corporation tax	400	633	158
Land revenue	320	307	96
Customs	550	1080	196
Excises	390	849	217
Sales taxes	390	750	192
Miscellaneous taxes	220	363	164
Total:	2270	3981	175
Additional taxation	1750	—	—
Total taxation:	4020	3981	99

Sources: *Second-plan* projections: 1964/65 at 1959/60 rates, from [14, p. 56]. Additional taxation, from [14, p. 23]. 1964/65 estimates (at 1964/65 rates including additional taxation), from [15, p. 67].

The *Second Plan* advocated "a greater use of taxes and subsidies to secure a desirable allocation of resources instead of relying on a multiplicity of direct controls..." [14, p. 49]. In particular, it argued strongly for an important surcharge to eliminate the windfall gains to import licensees and eventually the licensing system itself [14, Pp. 50-51]. While the aim was not achieved, important steps were taken. Table VII shows the average rate of taxes (import duty plus sales tax) on imports at the beginning and at the end of the Plan period. Notable increases were made in the 1960/61 budget and smaller changes were made throughout the Plan period including, finally, a "regulatory duty" on items included in the new Free List of license-free imports in June 1964. In an important sense, however, the increased reliance on the market for determining import composition[8] was due not to increased duties of a regulatory nature, but to substantial increases in the balance-of-payments deficit on goods and services account which was financed by increased aid. It was primarily the increased availability of foreign exchange that made the increased market dependence work, not the changes in duty structure, even though substantial changes were made in the latter[9].

[8]The development of increasingly liberal policy is traced out by Naqvi [7] and, with estimates of the quantitative importance of specific measures, by Thomas [23].

[9]For indirect support of this proposition, *see* the results of Pal's study [17].

TABLE VII

RATES OF TAX ON IMPORTED GOODS BY TYPE OF COMMODITY

Commodity	1959/60	1960/61	1964/65
	(....*percentage of c. & f. price*....)		
Consumption goods			
Essentials	35	55	56
Semi luxuries	54	111	118
Luxuries	99	140	144
Raw materials for consumption goods			
Unprocessed	26	27	31
Processed	43	50	65
Raw materials for capital goods			
Unprocessed	23	28	32
Processed	38	40	55
Capital goods			
Consumer durables	81	85	91
Machinery and equipment	14	17	22

Sources: 1959/60 and 1960/61, from [21, p. 551].
1964/65 unpublished supplementary table in [20].

The Plan recommended lowering the rate of export duties on cotton and, to a lesser extent, on jute. These recommendations were adopted in successive budgets, as Radhu's summary tables show [20 ; 21]. Excise duties were also increased in accordance with the second-plan objectives, and in the last budgets of the Plan some of the suggested conversions from specific to *ad valorem* duties were adopted. The *Second-Plan* suggestion of a 2.5-percentage-point increase in the basic rate of sales tax was more than met, as the basic rate rose from 10 per cent in 1959/60 to 12.5 per cent in 1960/61, 15 per cent in 1963/64 and 16 per cent in 1964/65. On the other hand, the coverage of excise and sales taxes did not expand to the extent recommended by the *Second Plan*, nor, I would argue, to the extent necessary to make the indirect tax system a truly effective instrument of government policy. The failure of the government, particularly the provincial governments, to respond to the extensive discussion in the Plan about agricultural taxation and water rates has already been noted. A capital gains tax that the Plan suggested might be warranted, however, was adopted along with wealth and gift taxes (and a flurry of political opposition from the business community) in 1962/63. In general, one can say that the Planning Commission

was quite successful in getting its tax programme adopted, particularly in terms of the *direction* of change, during the second-plan period.

The *Third Plan* is much less specific than the *Second Plan* about the nature of future tax changes due in part to the fact that the Commission on Taxation and Tariffs had not made public a report at the time the Plan was drafted. One could fairly say, however, that the direction of change indicated in the *Third Plan* is an extension of the policy of the *Second Plan* with the exception of the attitude towards protection. The *Second Plan* clearly viewed the import taxes only as restrictive devices on "excessive" imports and as a means of absorbing purchasing power from the private sector, not as protective devices. The *Third Plan*, however, explicitly treats protection and the encouragement of import substitution, as discussed below.

Fiscal and Exchange-Rate Policy

In achieving the goal of eliminating foreign assistance at a level of income and an economic structure that can sustain its own needs for capital formation and imports, fiscal policy and its close cousins — exchange-rate and commercial policy — play an important role. These policy instruments are supposed to create a structure of incentives that will encourage saving and discourage consumption, encourage production for export rather than for domestic markets in consumption-goods industries, and encourage import substitution in capital- and intermediate-goods industries. The export-promotion and import-substitution programmes are supposed to be "saving oriented", since *i*) increased export earnings would be used for "development" imports, *ii*) domestic production of capital goods rather than of consumption goods would discourage any "unplanned" increase in consumptions, and *iii*) import policy would reduce imports of consumer goods and promote imports of capital goods, thus encouraging saving and discouraging consumption[10].

Export Promotion

The *Second Plan* proposed "to increase the output of commodities that can be sold in foreign markets to curtail domestic consumption in order to have a surplus for export, and to provide adequate incentives and opportunities to exporters". To do this job, the *Second Plan* argued that "taxation levels will have to be high enough to restrain consumption, and that more specific measures will have to be taken to restrict consumption of particular goods that can find an export market" [14, p. 94]. The *Evaluation Report*

[10] *See*, [15, especially Pp. 33-35].

[13] explains that the achieved 7-per-cent rate of growth of exports greatly exceeded the Plan target (3 per cent). Four factors were responsible for the more rapid growth: *i)* greatly increased production of cotton and fine rice; *ii)* diversification of markets; *Hi)* strengthened incentives; and *iv)* stronger "institutional framework"[11]. Strengthened incentives included in the *Second Plan* were the Export Bonus Scheme, essentially a multiple exchange-rate device to selectively devalue the rupee[12], and "fiscal policies, particularly additional taxation measures, [which] also helped in curbing consumption and directing a larger proportion of increased production into the export market" [13, p. 18]. Unfortunately, the latter export policies do not seem to have been as successful as the *Evaluation Report* and the *Third Plan* would have one believe from their texts. Though there may have been some effect of the Bonus Scheme on minor exports and remittances from abroad, two industries singled out in the Second Plan (cotton textiles and tea [14 Pp. 94-95]) for more than one-sentence treatment, both responded negatively over the period[13]. In these two industries in which the fiscal policy package designed to restrict domestic consumption and increase exports should have had its quantitatively most important impact, fiscal policy did not simply fail to raise the share of exports in increased production, but it allowed total exports to fall[14].

The *Third Plan* notes that most production increases are projected in products that could be consumed at home, and adds "it will be necessary, therefore, to adopt fiscal and other measures to restrain consumption of exportable commodities and channel increased production into the export market" [15]. It will certainly be necessary for the measures adopted to be stronger in the *Third Plan* than in the *Second Plan,* if the results are to be achieved•

Import Substitution

Literature on the subject of import substitution has blossomed extensively since the *Second Plan* was published. The extent of the Second-Plan comment on the subject was: "it is necessary to substitute domestic production for imports wherever possible" [14, p. 96]. Virtually no discussion of principles, of policies, or of particular industries followed. Now, however, there exists a sizeable and rapidly growing literature on import substitution in Pakistan, including [3; 6; 19; 21; 22]. The *Third Plan* itself argues that

11 See [13, p. 18; 15, Pp. 81-82].

12 *See* [1] for an explanation and analysis of the Bonus Scheme.

13 For extended discussions of the consumption-export problem in cotton textiles and tea, *see* [3; 24].

14 Exports as a per cent of cotton-textile production fell from 19 per cent in 1959/60 to 11 per cent in 1963/64, while tea exports as a per cent of production fell from 23 to less than one-tenth of one per cent over the same period. Figures are from [6, Pp. 124 and 126].

import substitution in consumer-goods industries may lead to "domestic pressure for higher consumption levels which emerge when the capacity of consumer-goods industries is expanded". The Plan adds, "it is a better strategy to limit the expansion of the capacity of the consumer-goods sector in the very first instance and to deny the economy the temptation of an unplanned increase in its consumption" [15, p. 34][15]. The *Third Plan* later argues that "within the field of import substitution, major emphasis will be on producer-goods industries in order to meet the country's growing requirements of capital goods and machinery by domestic production" [15, p.50]. In both the "Resources and Financing" and the "Balance of payments" chapters, the *Third Plan* insists that there be a review of the tariff structure with the preliminary recommendation as a rise in protection afforded to domestic capital-goods industries[16].

The initial arguments over import substitution took for granted that, since the level of protection was much lower for intermediate- and capital-goods industries, such industries had not been doing well in terms of either absolute size or rate of growth. It was argued quite well [3 ; 19] that investment in consumer-goods industries had gone too far. Lewis and Soligo [6] showed, however, that the growth of intermediate-and capital-goods industries and import substitution in these industries had been quite substantial despite the limited protection afforded these industries by the tariff structure. More recently Soligo and Stern [22] have suggested that the expansion of many consumption- goods industries has gone so far that the marginal productivity of labour and capital in consumer goods industries may even be negative when they are valued at a "correct" set of relative prices. Even if the latter conclusion is not strictly true, as may be the case when more adequate data are used and the methods are improved, the problem of the incentive structure given by indirect tax rates bears careful examination, as their results certainly point in the proper direction.

Combining Tax and Exchange-Rate Incentives

In an effort to tie together somewhat the problems of export promotion and import substitution with those of indirect tax and exchange-rate policies, I have given in Table VIII some rough estimates of the exchange

15The *Third Plan* also states that "there is a great need for legislative action preventing monopolistic practices in all established industries like textiles, where the freeplay of market force should gradually bring down prices" [15, p. 119]. Latter it notes that "blanket protection of the consumer-goods sector has left no inducement for it to improve its efficiency so that some selected adjustments [in tariffs] will have to be made in order to introduce the possibility of foreign competition". Two points should be noted. First, the intention to bring down prices of such items as cotton textiles to the consumer is quite in conflict with the stated policy using domestic indirect taxes to prevent consumption liberalization and to improve export surpluses. Second, the aim of introducing foreign competition to domestic import-competing consumption-goods industries is in conflict with the goal of further orienting the import composition to development imports.

16The same suggestion was made earlier in [4; 17; 21].

rates for different types of goods implicitly facing various groups in the economy. Although the official rate of exchange is approximately 4.75 rupees to one US dollar, export taxes, import duties, sales and excise taxes and the Export Bonus Scheme introduce easily measurable distortions between world and domestic prices at an exchange rate of 4.75, and these distortions can be thought of as implicit exchange rates. I have not tried here to take account of the additional and important problem treated by Pal [17] of additional differentials due to the structure of import licensing *(i.e.,* quantitative restrictions), though these: *i)* are quite substantial in many industries; and *ii)* increase the general incentives for import substitution.

The "export rate" in Table VIII is the amount of rupees (or equivalent rupee value) received by an exporter for exports sold for one dollar abroad. Export taxes reduce this amount, and the Export Bonus Scheme increases it[17]. The "import rate facing users" is the total amount in rupees that would be paid *i)* foreign exchange, *ii)* import duties, and *Hi)* sales taxes on imports in order to import goods worth one dollar from abroad. The "rate facing users" is not an appropriate measure to get the rate of protection, however, since there are disincentives to domestic production in the form of excise and sales taxes which must be subtracted to get the "import rate facing producers of substitutes".

In the absence of indirect taxes and subsidies, all exchange rates would be 4.75, but it is quite clear from Table VIII that the differences are quite substantial. If one is interested in the problem of encouraging exports relative to import substitution, one compares Columns (2) and (4) and if one wishes to see the impact of domestic indirect taxes in attempting to divert production from domestic use to export, one compares Columns (3) and (4). The comparisons are revealing. For jute textiles, domestic taxes forced near equality between export and domestic-sale incentives, while for cotton textiles it would be much more profitable to sell in the domestic market rather than to export on the basis of the tax and exchange-rate incentives.

The implicit exchange rates given in Table VIII are somewhat less accurate for the goods classified by type, but the orders of magnitude are such that the comparison would not be changed substantially by further refinements. It is very difficult to find a rationale for the structure given here. The only group of commodities for which the exchange rate and indirect tax structure provide incentives for exports greater than those for import substitution and domestic use are the investment and related goods

iyNote that I have assumed here that foreign-offer curves are perfectly elastic. Though this is not true for jute and jute goods, it is probably a fairly good approximation for other exports and for imports.

industries! Luxuries and semi-luxuries receive the greatest additional incentives for production for domestic rather than foreign markets, since the level of domestic indirect taxes does not offset the height of the explicit protection for these goods and leaves the implicit exchange rate more favourable for import substitutes than for exports[18].

TABLE VIII

ESTIMATED IMPLICIT EXCHANGE RATES FOR VARIOUS GOODS BASED ON INDIRECT TAX AND EXPORT BONUS STRUCTURE

(rupees to US dollar)

	Export rate	Import rate facing users	Import rate facing producers of substitutes
(1)	(2)	(3)	(4)
Official exchange rate	4.75	4.75	4.75
Raw cotton	4.6		
Cotton textiles	6.2	12.4	10.2
Raw jute	4.5		
Jute textiles	6.2	8.1	6.3
Consumer goods			
Essentials	4.75	7.4	7.4
	6.2		
	6.9		
Semi-luxuries	6.2	10.0	9.1
	6.9		
Durables	6.9	8.1	7.4
Luxuries	6.2	11.5	9.6
	6.9		
Capital goods and equipment	6.9	5.7	5.5

Note: Rates apply to 1963/64. Intermediate goods are omitted because comparable figures are not easily available.

Sources: Export Rates: Export bonus rate is 20 per cent on cotton and jute textiles and 30 per cent on most other manufactured exports. The rate for raw cotton and raw jute computed from: *i*) the specific duty on exports; and *ii*) the prices of cotton and jute in 1964 to adjust exchange rate.
Import Rates Facing Users: This would be the exchange rate a person would pay inclusive of duties and sales taxes to import the group of items in question. Rates are from [20].
Import Rates Facing Producers of Substitutes: For cotton textiles, jute textiles and capital goods, the exchange rate facing consumers was adjusted downward by the ratio of domestic indirect taxes to taxable domestic production from [6] for 1963/64. Essential consumer goods are not adjusted since domestic indirect taxes are low. Semi-luxuries and durables taken at 100 per cent, luxury goods taken at 20 per cent, indirect tax rate for adjustment downward. (*see* [20; 21] for industry by industry figures that justify the use of the averages).

[18] Soligo and Stern [22] also find that the rate of protection to *value added* is much higher for consumer-goods industries than for intermediate and capital goods, thus strengthening the bias still further.

While the *Third Plan* may be correct that there are limitations to exports imposed by "demand in the international market for Pakistan's industrial exports", it is quite clear that the incentive structure has not been set up to test the international market to its utmost. It is imperative that more adequate steps be taken in the third-plan period to assure that proper incentives be given to production for export, greater disincentives to production of consumer goods for domestic uses, and greater incentives to production of investment and related goods for domestic use, since this category receives the most unfavourable exchange rate of any group of commodities except raw cotton, raw jute and cotton yarn.

In view of the exchange rates implicit in Table VIII as well as the general characteristics of Pakistan's growth, the size of the current balance-of-payments deficit and the extent of current overvaluation of the rupee [17] even at current levels of taxes and subsidies, one must dispute vigorously the statement in the *Third Plan* that "the ultimate objective (of export policy) must be to reduce and gradually eliminate the dependence of our industries on the Export Bonus Scheme, by strengthening our export incentives through other fiscal measures and increasing the efficiency of our industrial units" [15, p. 90]. It seems abundantly clear from all indications that the Pakistan rupee is still overvalued at the rate of 4.75 to the US dollar, even with the current props to maintain the official rate. It would be more rational to move in the direction of providing adequate incentives to the export industries by a more realistic exchange rate. Since the value of a dollar's worth of imports to the economy is in the neighbourhood of 7.5 to 9 rupees, it is quite clear that valuing exports at 6.2 or 6.8 rupees represents a clear loss of welfare, since increased exports can buy increased imports which have a higher value to the economy than import substitutes[19]. The political disagreeableness of talking about devaluation is quite obvious, and it is perfectly understandable that a government would prefer to solve its exchange-rate problems by implicit rather than explicit devaluation. If, however, the aim of fiscal and balance-of-payments policy in the *Third Plan* is to try to "legitimize" an export exchange rate of 4.75, instead of at the bonus rate, the Plan is not very well conceived. Import substitution through higher protection will lead to lower real income than export promotion through more realistic exchange rates.

IV. SUMMARY AND CONCLUSION

An analysis of the reasons for improved growth performance of Pakistan's economy in recent years has not been attempted here. Some of

19 on the value of import substitutes, *see* [22]. **Note again that the value of a dollar's worth of imports is based solely on the exchange rate and indirect tax system. The substantial additional premium on imports reported in** [17] **is not included. If it were included, however, the differential incentive for import substitution is even more pronounced.**

the key macroeconomic variables related to fiscal policy have been discussed with regard to past changes and the possible effects of government policy, and the third-plan projections have been examined in light of the record of the past ten years. At the aggregate level, the major difficulties to be faced in light of the past record are the following:

i) attaining in the third-plan priod the 22-per-cent marginal rate of saving that was claimed as the second-plan achievement; (in view of the scanty evidence one can hardly support any firm figure as "the marginal rate of saving, and most alternative measures are below 22 per cent for the past.)

ii) government efforts to increase tax revenues at a rate equal to that in the *Second Plan*; (private saving would have to accelerate its growth more than is realistically possible if total saving goals are to be reached under the present rates of revenue growth projected in the *Third Plan*.)

iii) increasing once again the marginal rate of exports over the rate reached in the *second-plan* period; and

iv) decreasing the marginal import rate to one almost the same as that prevailing in the stagnation of the late 1950's. (The costs of pushing import substitution to the extent projected may be too high relative to the costs of further increasing the flow of exports to provide foreign exchange for greater imports.)

While the export target seems to be reasonable, the projected import rates may be inadequate to sustain the size of the development programme and the growth projected for some sectors. Public-saving targets (but particularly tax revenue targets) are too low at the aggregate level and are woefully inadequate with regard to such sectors as agriculture. Since the public-saving targets are low and the aggregate saving target seems to be high, the expected increases in private saving implicit in the Plan are almost certainly unattainable in light of past performance.

The Appendix to this paper raises some doubts about the accuracy of the above judgements in view of the many revisions in aggregate economic statistics that have been made recently and that will continue to be made. Since such questions of data adequacy apply equally to the Plan evaluation and projections, however, I shall not apologize unnecessarily for the results or the judgements made.

At the microeconomic level of differential tax, exchange rate and fiscal policies, the performance during the second-plan period was mixed. The movement towards substitution of indirect fiscal controls for direct administrative controls made considerable progress due primarily, no doubt,

to the large increase in resources made available in the form of greatly-increased imports. Substantial rises in indirect-tax rates took place in the directions the *Second Plan* has indicated. The increases that took place, however, were not adequate to restrict domestic consumption of important exportable commodities. There was some movement towards a more rational set of incentives for promotion of exports and for the improvement of incentives for import substitution in intermediate and capital goods. A major area of public policy yet to be resolved, however, is the establishment of a set of exchange rates and domestic indirect taxes that will sufficiently encourage production for export relative to production for the domestic market. The projected decline in the marginal and average import ratios and the massive size of the implied import substitution programme seem to be unwarranted until adequate incentives for export industries are established through exchange rate or indirect tax rate adjustments.

Progress during the second-plan period was good, though it is impossible to say how good with much accuracy. Progress in the third-plan period will continue to be made only if there are increased attempts to rationalize the exchange- and tax-rate systems and to tap additional domestic resources for public saving without reducing private saving. These are tough realities, tougher because of the deceleration of growth of imports and import surpluses projected for the Third Plan. The economy, and particular sectors of the economy, will not enjoy in the third-plan period the initial lift they received from rapidly rising imports during the second-plan period. Adequate government policy measures will have to be taken, and since they will be taken without the rapidly rising additions to resources from abroad, there are bound to be more decisions in the Third Plan that will hit particular sectors harder than the same measures would have during the second-plan period when imports were being "liberalized" more and more each year.

When the stated objectives of increasing social and economic justice are added o these above difficulties, it is clear that Pakistan must devote herself to the development effort with even more vigour than she has in the past if the aims and objectives of the *Third Plan* are to be fulfilled.

REFERENCES

1. Bruton, H. J. and S. R. Bose, *The Pakistan Export Bonus Scheme.* (Karachi: Pakistan Institute of Development Economics, 1963).

2. Haq, Mahbubul, *The Strategy of Economic Planning.* (Karachi: Oxford University Press, 1963).

3. Khan, Azizur Rahman, "Import Substitution, Export Expansion and Consumption Liberalization: A Preliminary Report", *Pakistan Development Review,* Vol. Ill, No. 2, Summer 1963.

4. Lewis, Stephen, R. Jr., "Aspects of Fiscal Policy and Resource Mobilization in Pakistan", *Pakistan Development Review,* Vol. IV, No. 2, Summer 1964.

5. Lewis, Stephen R. Jr. and M. Irshad Khan, "Estimates of Noncorporate Private Saving in Pakistan, 1949-62", *Pakistan Development Review,* Vol. IV, No. 1, Spring 1964.

6. Lewis, Stephen R. Jr. and Ronald Saligo, "Growth and Structural Change in Pakistan's Manufacturing Industry, 1954 to 1964", *Pakistan Development Review,* Vol. V, No. 1, Spring 1965.

7. Naqvi, Syed Nawab Haider, "Import Licensing in Pakistan", *Pakistan Development Review,* Vol. IV, No. 1, Spring 1964.

8. Pakistan, Central Statistical Office, *Statistical Bulletin.* (Karachi: Manager of Publications), various issues. Referred to as *CSOSB* in the text.

9. Pakistan, Economic Adviser to the Government of Pakistan, *Pakistan Economic Survey,* 1963-64. (Rawalpindi: Government of Pakistan Press, 1964).

10. Pakistan, National Income Commission, *Interim Report.* (Karachi: Central Statistical Office, Reproduction Unit, September 1964).

11. Pakistan, Planning Commission, *Mid-Plan Review — Evaluation of Progress: First Three Years of the Second Five-Year Plan.* (Karachi; Government of Pakistan Press, May 1964). Referred to as 1964 *Mid-Plan Review,* or *Three-Year Review,* in the text.

12. Pakistan, Planning Commission, *Mid-Plan Review of Progress in* 1960-61 *to* 1961-62 *under the Five-Year Plan.* (Karachi: Government of Pakistan Press, March 1963). Referred to as 1963 *Mid-Plan Review* in the text.

13. Pakistan, Planning Commission, *Preliminary Evaluation of Progress during the Second Five-Year Plan.* (Karchi: Government of Pakistan Press, March 1965). Referred to as *Evaluation Report* in the text.

14. Pakistan, Planning Commission, *The Second Five-Year Plan,* 1960-65 (June 1960). Also see *Revised Estimates for the Second Five-Year Plan.* (Karachi: Government of Pakistan Press, November 1961). Referred to as *Second Plan* in the text.

15. Pakistan, Planning Commission, *The Third Five-Year Plan,* 1965-70. (Karachi: Inter Services Press Ltd., May 1965). Referred to as *Third Plan* in the text.

16. Pakistan, Planning Commission, International Economics Section, *A Revised Balance of Payments,* 1960-61—1962-1963. Mimeographed. (Karachi: Planning Commission, 1964).

17. Pal, Mati Lal, "The Determinants of the Domestic Prices of Imports", *Pakistan Development Review,* Vol. IV, No. 4, Winter 1964.

18. Papanek, Gustav F., "Industrial Production and Investment in Pakistan", *Pakistan Development Review,* Vol. IV, No. 3, Autumn 1964.

19. Power, John H., "Industrialization in Pakistan: A Case of Frustrated Take-Off?", *Pakistan Development Review,* Vol. III, No. 2, Summer 1963.

20. Radhu, Ghulam Mohammad, "Supplementary Study: Rate Structure of Indirect Taxes in Pakistan, 1963/64 and 1964/65". Unpublished manuscript. (Karachi: Pakistan Institute of Development Economics, June 1965).

21. Radhu, Ghulam Mohammad, "The Rate Structure of Indirect Taxes in Pakistan", *Pakistan Development Review,* Vol. IV, No. 3, Autumn 1964.

22. Soligo, Ronald, and Joseph J. Stern, "Tariff Protection, Import Substitution and Investment Efficiency", *Pakistan Development Review,* Vol. V, No. 2, Summer 1965.

23. Thomas, Philip S., "Import Liberalization in Pakistan". Draft manuscript dated March 1965.

24. Thomas, Philip S. and Irshad Ahmad, "Physical and Economic Determinants of Tea Production in Pakistan", *Pakistan Development Review,* Vol. IV, No. 3, Autumn 1964.

25. Tims,Wouter, *Growth Model for the Pakistan Economy.* Mimeograph, dated March 1965.

Appendix

A BRIEF INTRODUCTION TO SOME PROBLEMS OF USING PUBLISHED AGGREGATE ECONOMIC STATISTICS IN PAKISTAN

There are numerous serious problems in studying aggregate economic relations in Pakistan, particularly those dealing with saving relations. The basic problem is one of inadequate information about economic activity, price relationships and flows of goods and services in major sectors of the economy. The problem is compounded by the presence of a fairly large number of "official" estimates of various magnitudes, and by a fairly rapid rate of revision of part or all of the basic economic series or indicators. For example, if one picks up the two *Mid-Plan Reviews* of 1963 and 1964 and the *Evaluation Report* of 1965 (all produced by the Planning Commission), one finds three distinctly different estimates of GNP, each based on a separate method of estimation, and only the last of which agrees with the estimates being published at the same time by the Central Statistical Office. The basic revision in the national accounts done by the National Income Commission (*see* its *Interim Report* [10] of September 1964) was the first done for 1959/60 to 1963/64. Fortunately, the CSO began publishing in its *Bulletins* in 1965 a revised national-accounts series from 1949/50 to the present, both in current and in constant (1959/60) prices.

Saving is estimated in Pakistan by estimating investment and by deducting some measure of the import surplus from investment to find the amount of domestic investment that was offset by domestic saving. Saving estimates can, therefore, vary with: *i*) the investment estimate; and *ii*) the estimate of import surplus which in turn depends on *a*) the estimate of imports, *b*) the estimate of exports, *c*) the concept of balance-of-payments deficit that is used, and *d*) the estimates of balance on invisibles account.

Investment estimates are made by the Planning Commission on the basis of availability of goods used in investment (cement, structural steel, machinery) and, more recently, on the basis of scattered records of private but primarily public agencies making capital expenditures as well. Estimates of "nonmonetized investment" are, to the best of my knowledge, just guesses, related in some way to value added in agriculture. The three Planning-Commission documents mentioned also have three different

estimates of investment activity. The 1963 *Mid-Plan Review* has investment estimates that are roughly comparable in method of estimation to those used by the Planning Commission for earlier years, and they are also quite close in concept to those used in [2] which presents the first published estimates back to 1949/50. The two revisions of investment estimates which appear in the 1964 *Mid-Plan Review* and the 1965 *Evaluation Report* only go back as far as 1959/60 so that there are no revised estimates of investment before 1959/60 yet available on the same basis. Finally Papanek [18] has his own set of industrial investment estimates which are based on an entirely different method of estimation covering the period before 1959/60.

The balance-of-payments estimates, like those for investment, deserve much more space than is available here. I have noted elsewhere [5] some of the problems of the choice of concepts and of data, and showed the sensitivity of the saving estimates to the use of CSO or State-Bank estimates of the payments deficit or a measure based on CSO's goods balance plus the State Bank invisibles balance. In addition to problems of different coverage in time and concept by the CSO (arrivals of goods) and the State Bank (payments for goods and services) there are certain goods, particularly aided goods and especially PL-480 imports, which are apparently treated differently by the CSO and the State Bank. Therefore, the Planning Commission prepares its own estimates of imports, exports and other receipts and payments based on a variety of sources, and it is these latter estimates that appear in Planning-Commission publications. The Planning-Commission methods are given in the mimeographed document [16]. Once again, however, the backward look for the Planning-Commission balance-of-payments estimates ends in 1959/60, so one has to fend for oneself in the earlier period. In addition to these numerous problems of measuring imports and payments, the Planning Commission occasionally uses different concepts of the payments deficit to subtract from investment to get gross domestic saving. In the 1963 *Mid-Plan Review*, they neglected to account for PL-480 imports, thus understating the deficit and overstating domestic saving. In parts of the *Third Plan* "external resources" are used rather than the current payments gap so that changes in foreign-exchange reserves, which are saving or dissaving, are neglected.

The meaning of these different sets of estimates with their different conceptual bases is that one must be exceedingly careful in using published data, particularly that from the Planning Commission, whose explanations of changes made from time to time, when available, are usually in limited-circulation mimeographed form. Most series break in conceptual basis at 1959/60 and there are several sets for the post-1959/60 period. Presumably, the more recently made estimates are better than those made earlier. But

since the new bases have not been used to fill in the earlier years, a part of differences between the fifties and sixties is due to different bodies of statistics. Different evaluations of the performance during the 1960's are due in part to the three new sets of GNP and investment estimates that have appeared in the past three years. While I would definitely *not* join some cynics who have said that the successful completion of the Second Plan was due to a successful revision of the national accounts, a great deal of caution needs to be exercised in drawing specific conclusions (or calculating fixed coefficients) from this period when the estimates were changing so rapidly, and when they are likely to change still more.

To save others the time of comparing the effects of the revised estimates on some of the key macroeconomic magnitudes, I have prepared tables of comparison for the years 1959/60 to 1964/65 which are given below. Table A-I compares the three successive estimates of investment, imports, exports, GNP, and saving that appeared in the 1963, 1964 and 1965 reports of the Planning Commission. Since the largest basic changes are in the investment series, Table A-II compared the components of gross investment from the three reports, and one can see that a principal source of the rise in the estimates for total investment was the increase in the "monetized" investment of the private sector. The various national product estimates that were available for the year 1959/60 are given in Table A-III, by sectors of origin of national product, so that one can compare the source of change in the aggregate estimates.

The most interesting differences are to be found between the Planning-Commission estimates in the 1904 *Mid-Plan Review* and the new official estimates of the National Income Commission for 1959/60 as a base year, shown in Table A-III. The Planning-Commission estimates were significantly higher in mining (by 28 per cent), large-scale manufacturing (by 28 per cent), small-scale manufacturing (by 28 per cent), construction (by 77 per cent), public utilities (by 40 per cent), and ownership of dwellings (by 95 per cent). It is also quite a bit higher in other services, but since the National Income Commission estimates are higher for wholesale and retail trade, for banking and insurance and for transport and communications, there may be an offset due to different classification among these three categories, while there is less likelihood of overlap among other sectors. The National Income Commission estimates are higher for the largest sector, agriculture, fisheries and forestry (by 10 per cent) and for the general services category (by 16 per cent). Using as a naive rule of thumb the notion that the official statistics generally understate the value of almost anything that they attempt to measure *(i.e.,* that undercoverage is much more important than double counting), I have shown in the last column of Table A-III a naive recomputation of GNP for 1959/60 based on the higher of the two

estimates (Planning Commission and National Income Commission) for value added by sector for that year. The combined estimate gives a GNP of about 8 per cent higher than the Planning Commission estimates and about 10 per cent higher than the new national accounts.

While I would certainly not claim much accuracy for the combined GNP estimates, one purpose in presenting it is to show that under a not unreasonable rule of thumb (compared to other estimation techniques for Pakistan's statistics) one can obtain a fairly different base-year magnitude. The new higher GNP would, of course, lower investment and saving ratios for the base year, and they would lower the marginal ratios from that year to any future year if the *rates* of growth were kept the same, since the absolute change in the income (the denominator) would be larger than it had been[1]. More important than this possibility are the differences in sectoral value added, which presumably reflect difference in sectoral gross output. Investment estimates, as mentioned, are prepared by the Planning Commission on the basis of, among other things, estimates of construction activity and output and imports of steel, cement and machinery. The Planning-Commission estimates of value added in large- and small-scale manufacturing and particularly in construction are higher by a considerable margin than those of the National Income Commission. While the Planning Commission had adopted the National Income Commission GNP figure for aggregate presentation in the *Evaluation Report* and in the *Third Plan*, the investment estimates in both Planning-Commission documents are based on the Planning Commission's old estimates of construction activity and the availability of certain manufactures, not on the new National Income Commission accounts. This fact can be seen in [25, Chapter 3] which gives the only generally available discussion of the sources and methods for constructing the new (1959/60-1964/65) estimates of investment[2].

Thus, even the latest investment series and the latest official GNP series are not consistent in their basis. It is quite obvious that the pre-1959/60 investment series is not comparable to the pre-1959/60 GNP series. One doesn't know much about the pre-1959/60 trade balance figures, except that they have not been revised to be completely comparable to the post-1959/60 series. The saving series, therefore, is open to variation because of the differences in investment and trade balance definition, and the saving *ratio* series varies with the GNP estimates as well as the saving estimates.

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[1]Since investment, and therefore, saving estimates are already based on the higher sectoral value added figure, the numerator would not change.

[2]Tims also discusses in Chapter 5 the reasons for differences between Planning Commission and National Income Commission estimates of construction activity, the latter being based on cement availability only, while Tims' are more broadly based.

Price Data and Investment Deflators

There are other problems of using aggregate statistics on an historical basis, particularly when one wants to convert data to constant prices. For some commodities (particularly those that are somewhat homogenous, those that were relatively very important in terms of value produced or sold in the 1950's and those whose prices are not controlled) there are relatively good data with good coverage over time that appear to be fairly sensitive to changes in supply and demand conditions. Major foodgrains, cotton, jute and sugarcane, and many minor foodgrains, are well covered among agricultural commodities. Fruits and vegetables, and forestry, fishery, and livestock products (except hides and skins) are not well covered in either extent or accuracy. Cotton textiles, jute textiles, cigarettes, tea and a few other consumer goods are fairly well covered among manufactured goods, but prices of many manufactured goods are not well covcred, regardless of whether the goods are of domestic or of foreign origin. Perhaps the worst coverage of all is in producers goods and manufactured raw materials, particularly those that are imported, which latter constitute the major share of such products. Since the weight of producer goods, and particularly imported producers goods, has increased over the past ten years in total domestic availability of manufactures *(see* [6]) the most poorly registered goods are becoming more important in what should be the price index for manufacturers. Finally, if one wishes to construct a price index for investment goods that can be used to deflate or inflate historical series of investment (depending on whether they are estimated first in current or constant prices) one is almost completely at a loss for reasons both of conceptual definition and coverage of price statistics.

Why pick out an investment deflator or inflator as the least reliable? First of all, some prices were controlled during the period so the recorded price movements do not reflect movements in relative scarcities, which is presumably why we are interested in prices. Blackmarkets existed and still do exist for cement and for imported goods of all types, machinery and equipment included. The domestic prices of imports, as shown by [17], arc well above *cScf* prices plus duties, due to currency overvaluation and artificial restrictions on imports. What we do not know is how this mark-up behaved over time, although there is a general feeling that it has fallen over the past decade as foreign-exchange availability (and the volume of imports) increased and as the domestic supply of close or distant substitutes rose *(see* again [6]). In addition to the fact that the controlled prices, which are most likely to be recorded, do not reflect scarcities or movements in scarcities, there is extremely poor coverage of producer goods in official statistics. Despite the fact that domestic production of machinery (except electrical) in 1959/60 was less than 13 per cent of total availability, the

"machinery and equipment" subindex of the CSO's wholesale price index is composed of the *list* prices of two domestic manufactures, for three and four pieces of machinery in East and West Pakistan, respectively. It is small wonder that there has been virtually no change in the wholesale price index for machinery over the past five to eight years. The index probably tells us nothing about the price movements of machinery and equipment. I do not mean to imply that it is a simple matter to get an appropriate price index for producer goods. My purpose is only to say that the data now available are definitely not up to the job.

The problem of price control and licensing severely affects the estimation of investment activity at either current or constant prices. If two identical factories are built and equipped by two different firms, one in possession of all proper sanctions which allow purchase of material at controlled prices, and one built with materials of foreign origin purchased locally from a commercial importer, the latter is likely to pay 60 per cent more for his material than the former (*see* [17]). What, then, is the correct figure for investment activity in *i*) current and *ii*) constant prices? If we take actual expenditures on investment as the current-price estimate, how do we deflate from a future time period to get constant prices? Or, if investment estimates are made by obtaining an index of the availability of investment *goods* in different periods, choosing a base level and getting constant price investment estimates first, how does one correct to current price estimates? And how was the base estimate arrived at by the expenditures actually made, or by the expenditures that would have been made if all investors had had access to materials, equipment, and labour at approximately the same set of prices? What is the meaning of the constant price estimates when the share of properly licensed investors changes?

To illustrate this point, I will use Papanek's estimates of industrial investment [18], but I wish to be perfectly clear that I am doing so because his are the most detailed in method that have been published. The price index Papanek uses for machinery and equipment is in part a GATT index for machinery and, for recent years, the CSO's machinery subindex. Papanek corrects the GATT index to account for devaluation of the Pakistan rupee in 1955 which makes the price series rise sharply in that year. If one were interested in the prices paid by import licence-holders, this adjustment (plus an additional adjustment for import duties paid, if any) would be all right. But since all investors are not licence-holders, some were already paying the higher prices before the 1955 devaluation because of the scarcity of the imports that brought on devaluation itself. Finally, the GATT index for the *c&f* price *in rupees* to licence-holders for imported machinery is spliced directly onto the CSO's index of list prices for three or four items of locally produced equipment, and the net result is called a price index for machinery and equipment.

Since Papanek's estimates for industrial investment in the 1950's are probably the best currently available, I need hardly say more about the reliance we can put on investment estimates, current or constant price, for that period. I have already mentioned investment estimates since 1959/60. Since saving estimates depend on estimates of investment, the level and the movement of the saving estimates are certainly questionable and conclusions should be drawn with exceedingly great caution.

For all the above reasons, while there is no doubt that GNP is now growing faster than it was, that investment ratios are higher than they were and that saving ratios are higher than they were, to put faith in specific values of these magnitudes seems to me quite unjustified. Since future government efforts and government policy would need to be more strict and more decisive the more pessimistic the outlook for marginal saving, export and import ratios, it seems to me that it is dangerous to pick the rosy outlook for the third-plan period and to say all that needs to be done is to continue what we have been doing. Maintaining the performance of the past five years may not be as easy as is implicitly and explicitly assumed in the *Third Plan*.

TABLE A-I

COMPARISON OF COMPONENTS OF NATIONAL EXPENDITURE AMONG THREE SUCCESSIVE EVALUATION REPORTS

(in million rupees; current prices)

	1959/60	1960/61	1961/62	1962/63	1963/64	1964/65
A. *Gross Domestic Investment*						
March-1963 estimate	2,890	3,440	4,220	—	—	—
May-1964 estimate	3,430	3,460	4,480	5,630	—	—
March-1965 estimate	3,430	3,775	4,760	5,965	7,280	8,400
% increase, March 1963 to May 1964	19%	1%	6%	—	—	—
% increase, May 1964 to March 1965	0	9%	6%	6%	—	—
% increase, March 1963 to March 1965	19%	10%	13%	—	—	—
B. *Total Imports*						
March-1963 estimate	3,240	3,800	3,930	—	—	—
May-1964 estimate	3,270	3,790	3,980	4,790	—	—
March-1965 estimate	3,190	3,850	4,059	4,885	5,933	6,832
C. *Exports*						
March 1963	2,050	2,270	2,380	—	—	—
May 1964	2,080	2,296	2,380	2,750	—	—
March 1965	2,080	2,286	2,384	2,748	2,785	3,040
D. *GNP at Market Prices*						
March 1963	29,930	32,860	35,730	—	—	—
May 1964	33,280	35,660	38,700	39,720	—	—
March 1965	32,705	36,112	37,759	39,931	42,961	45,541
E. *Gross Domestic Saving*						
March 1963	1,600	1,910	2,670	—	—	—
May 1964	2,240	1,966	2,880	3,590	—	—
March 1965	2,320	2,211	3,085	3,828	4,132	4,608
% increase, March 1963 to May 1964	40%	3%	8%	—	—	—
% increase, May 1964 to March 1965	4%	12%	7%	7%	—	—
% increase, March 1963 to March 1965	45%	16%	15%	—	—	—

Sources: March-1963 estimates, from [12, p. 49].
May-1964 estimates, from [11, p. 91].
March-1965 estimates, from [13, p. 100].

TABLE A-II

COMPARISON OF COMPONENTS OF GROSS DOMESTIC CAPITAL FORMATION OF THREE SUCCESSIVE EVALUATION REPORTS

(in million rupees ; current prices)

	1959/60	1960/61	1961/62	1962/63	1963/64	1964/65
Two-Year Review Estimates						
Government plan investment	1,710	1,740	2,050	—	—	—
Indus Basin	—	20	50	—	—	—
Private monetized investment	940	1,060	1,350	—	—	—
Private nonmonetized investment	400	450	500	—	—	—
Change in stocks	—160	170	270	—	—	—
Gross domestic investment	2,890	3,440	4,220	—	—	—
Three-Year Review Estimates						
Government plan investment	1,170	1,730	2,060	2,470	—	—
Indus Basin	—	100	350	700	—	—
Private monetized investment	890	1,060	1,580	1,710	—	—
Private nonmonetized investment	400	400	450	430	—	—
Change in stocks	430	170	40	320	—	—
Gross domestic investment	3,430	3,460	4,480	5,630	—	—
Evaluation-Report Estimates						
Government plan investment	1,795	1,823	2,184	2,602	3,131	3,595
Indus Basin	—	100	210	780	890	950
Private investment	1,205	1,682	3,326	3,263	3,009	3,605
Change in stocks	430	170	40	320	250	250
Gross domestic investment	3,430	3,775	4,760	5,965	7,280	8,400

Sources: Two-year revenue estimates, from [12, p. 49].
Three-year review estimates, from [11, p. 91].
Evaluation-Report estimates, from [13, p. 100].

TABLE A-III

VARIOUS ESTIMATES OF NATIONAL PRODUCT BY ORIGINATING SECTORS FOR 1959/60 IN 1959/60 PRICES

(in million rupees)

	Old CSO revised estimates (Net)	*Two-Year Review* estimates (Net)	*Three-Year Review* estimates (Gross)	National Income Commission estimates (Gross)	Naive Recomputation (Gross)
Agriculture, fishery, forestry	14,873	15,430	15,200	16,753	16,753(NIC)
Mining	79		90	70	90(PC)
Large-scale manufacturing	2,008	3,680	2,010	1,565	2,010(PC)
Small-scale manufacturing	1,579		1,750	1,395	1,750(PC)
Construction	589		1,150	651	1,150(PC)
Electricity, gas, *etc.*	66		150	107	150(PC)
Transport, communications, *etc.*	990		1,450	1,857	—
Wholesale/retail trade	2,532	7,100	2,700	3,665	—
Banking and insurance	136		150	224	—
Ownership of dwelling	1,447		3,470	3,772	3,470(PC)
Public administration, defence	1,247	1,120	1,400	1,331	1,400(PC)
Services	2,411		2,500	2,112	7,858(NIC)
Factor services abroad	—33	—30	—30	—33	—33(NIC)
NNP at factor cost or	27,924	27,300	—	—	—
GNP at factor cost	—	28,740	31,990	31,439	34,598

Sources: Old Revised CSO estimates, from [8, October 1963, p. 1827].

Two-Year Review estimates, from [12, p. 50].

Three-Year Review estimates, from [11, p. 89].

National Income Commission estimates, from [8, April 1965, Pp. 930-939].

Naive recomputation: the higher of the estimates of value added in each sector was chosen from the *Three-Year Review* and the National Income Commission estimates. *See* Appendix for discussion.

The Structure of Revenue From Indirect Taxes in Pakistan

Stephen R. Lewis, Jr. & Sarfraz Khan Qureshi

This chapter originally appeared as an article in the Autumn-1964 issue of *The Pakistan Development Review* and is the result of research carried out in 1964 when the authors were Research Advisor and Staff Economist respectively, at the Pakistan Institute of Development Economics.

The data utilized in this paper were kindly supplied by the Central Board of Revenue Statistical Office. The staff of that office was most helpful in explaining the basic data. Mr. Leonard D'Souza assisted in compiling the data and in computations. For an introduction to the basic law and an analysis of the rate structure of these same taxes, *see* [9, Pp. 527-551].

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The Structure of Revenue from Indirect Taxes in Pakistan

Stephen R. Lewis, Jr. & Sarfraz Khan Qureshi

INTRODUCTION

Despite the fact that Central Government indirect taxes make up approximately three-fourths of the combined revenue of the Central and Provincial Governments in Pakistan, virtually no detailed studies of these taxes and their rate structure, revenue structure, effect on prices and effect on resource allocation have been undertaken as yet. This paper summarizes and presents some of the findings of preliminary studies on taxation undertaken at the Pakistan Institute of Development Economics. A companion piece on the rate structure of these taxes appears in the Autumn-1964 issue of *The Pakistan Development Review*. Further analysis is necessary, however, both in combining the results of these two studies and in bringing to bear other evidence such as price behaviour, underlying commodity flows and the impact of the various licensing systems in operation in Pakistan, before any firm conclusions about the impact of indirect taxes, their elasticity and their incidence, can be formed.

The importance of indirect taxes as tools of differential government policy need not be laboured here. The fact that they can be used to encourage or discourage particular types of resource utilization, as well as withdrawing purchasing power from the private sector in general, make

them a potentially powerful instrument for directing allocation of investment resources by the private sector, and the use of resources by both the private and the public sector. They may also be used to encourage production for foreign instead of domestic markets, to reduce demand for imports and to supplement or to substitute for direct licensing as a measure of resource allocation by government agencies.

In addition, in a country in which basic statistics on many sectors of the domestic economy are lacking, a fairly comprehensive set of indirect taxes, such as the sale tax in Pakistan, yields useful data provided that records on collections are maintained by type of commodity taxed. These data have been utilized in a study done at the Institute [2] to improve estimates of domestic output of various sectors. This data-gathering function may be a useful byproduct of indirect taxes, particularly in an economy in which the government is attempting to direct the allocation of resources to a large extent. Adequate and accurate data are a *sine qua non* of detailed planning.

We have presented here basic information and a preliminary descriptive analysis of collections of Central Government indirect taxes in Pakistan over the period 1954/55 to 1962/63. The revenue is classified by *i*) major industrial groups, and *ii*) major end- and intermediate-uses, and is crossclassified by imports, exports and locally produced goods. Provincial indirect taxes have been ignored, but the provincial shares in central indirect taxes have been included[1]. Provincial indirect taxes have not been an important proportion of total indirect tax collections in Pakistan so that the omission is not serious[2].

Section II of our study describes the sources and interpretations of the data used, as well as the system adopted for each kind of tax. In Section III, we discuss some of the difficulties involved in the analysis of tax incidence in an economy where physical controls over resources are predominent. In Section IV, we point out some of the major characteristics of the structure of indirect tax revenue in Pakistan by type of tax and by type of economic flow that is taxed. Some of the major structural changes in tax revenue from various industrial groups are brought out in Section V. Section VI presents the change in revenue structure by commodities classified according to end-use. A brief summary and some profitable lines of inquiry, or further questions that are raised by the preliminary study, are set out in Section VII. The Appendix gives the basic data according to the classification system adopted by the authors for the study.

1 For a discussion of Provincial-Central "sharing" of revenues, *see* [8].

2 Provincial excises fall largely on alcoholic beverages and narcotic durgs. Other provincial "indirect" taxes fall on betting, entertainment, *etc.*, not on industrial output of any kind (*see* [5]).

II. SOURCES AND DESCRIPTION OF DATA

The most convenient sources of tax data in most countries are the budget documents of the different levels of government. in Pakistan, no other source exists that publishes tax information regularly. On tax collections, budget documents contain at least four sets of figures: Budget Estimates, Revised Estimates, Provisional Actuals and Final Accounts. Budget Estimates of tax receipts are prepared fourteen months in advance—two months of the current and twelve months of the next fiscal year. Revised Estimates are based on the actual collections during the first ten months and the estimated receipts over the last two months of the current fiscal year. Provisional Actuals are presented two years after the Budget Estimates while Final Accounts become available after a period of five or six years. Budget Estimates and Revised Estimates differ considerably from the Provisional and the Final Accounts. The difference between the Provisional Actuals and the Final Accounts is not very marked[3]. The considerable variation and the substantial time-lag between the estimated and the actual tax receipts presents a serious problem in any effective economic analysis of the tax system in Pakistan. The Budget and Revised Estimates are of limited use since the figures will certainly change in due course. On the other hand, the Actual and Accounts figures are not available soon enough in published form to analyse the current economic situation. For the persent study, moreover, the budget data suffer from another limitation. Tax receipts are shown for major heads of revenue only, and no commodity breakdown is given. This precludes any reliance on budget documents for a detailed study of indirect taxation.

The primary source of tax data is the Central Board of Revenue (hereafter referred to as CBR) consisting of customs and Central Excise Departments. The CBR is responsible for the collection of customs and central excise duties. It also collects substantial federal revenues under the Sales Tax Act, 1951 and many other statutes enacted by the Government of Pakistan from time to time. The CBR has divided the country into several collectorates. The officers in charge of these collectorates periodically submit the figures of actual collections to the Statistical Office of the CBR. These data are compiled in formats required by the Ministry of Finance. The data are available at CBR in unpublished form and are sent to any government department or ministry in as much detail as requested by them. For the fiscal years 1953/54 to 1956/57, however, the revenue data for customs and central excise duties have been published by the CBR in the *Annual*

[3]For a quantitative estimate of the extent of error of the different estimates, *see* [10, Pp. 7-19].

Customs and Central Excise Administration Reports[4]. For years other than 1953/54 to 1956/57 and for the sales tax collections both on imports and on domestic goods, the only source of detailed data is the unpublished records of the CBR. The CBR has made these records available to the Institute for its work on the tax system.

A word should be said regarding the classification of taxes as given in the Budget and in most official documents[5]. *First,* as noted above, there is no commodity breakdown of indirect taxes other than for excise duties. This limits the detailed analytical usefulness of the budget data. *Second,* there is a tendency to report customs duties, both import duties and export duties, together and to discuss trends in total collection from both. The same is true of sales taxes which fall on imports, exports, and domestic production. Thus, it is not possible to use the budget data even for gross analytical computations, such as the taxes on all export flows, all import flows, and all flows of domestic production. This rather serious drawback could be remedied quite easily since the basic data on collections specify the account from which the revenue comes. Such a reform in reporting would increase the usefulness of the budget and its supporting documents considerably at practically no cost. The addition of a commodity breakdown for all taxes would be extremely useful also, but it would require a more basic decision on the amount of detail desired in the budget documents. At the very least, the way should be cleared to make the detailed classification available with short time-lags in the form of publications by the CBR. In this paper, we have given all our classification according to major types of flow (import, export, and production), as well as commodity group taxed. This should, we hope, be of more use to the analysts of the Pakistan economy.

Since data from the budget documents are not in sufficient detail for the present study and unpublished data have been used, a comparison of the unpublished data from the CBR and the data from the budgets is necessary. Table I presents three sets of figures for the period 1954-63.

Obviously, there is little consistent relationship among the three different sets of figures thai we have compared here. In some years one is higher, in some another. Close agreement between any two of the three sources is not consistent from year to year. There are, however, very few

4*See* [3]. **The Indian Central Board of Revenue first brought out such report in 1938/39. Its publication was suspended, however, with the outbreak of World War II. After Independence, three such reports have been published for the fiscal years 1954/55, 1955/56 and 1956/57. Besides dealing with the administrative work of the Customs and Excise Departments, each report has fairly comprehensive statistical appendices.**

5*See,* **for example,** [4; 5; 6],

TABLE I

TAX-COLLECTION FIGURES BY DIFFERENT SOURCES

		1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
		(*in million rupees*)								
Import duty ..	Economic Survey	329.9	394.8	349.3	330.5	382.0	429.0	542.4	640.8	669.5
	Pakistan Budgets	*n.a.*	*n.a.*	*n.a.*	426.7	468.0	441.1	558.2	674.2	788.1
	CBR	366.9	428.7	395.4	415.6	375.5	414.3	549.3	663.6	761.4
Central excise duty ..	Economic Survey	130.0	165.8	182.7	232.7	327.5	328.5	402.1	391.2	481.8
	Pakistan Budgets	*n.a.*	*n.a.*	*n.a.*	210.8	290.4	331.8	406.1	400.0	481.3
	CBR	170.2	189.7	207.1	237.5	307.5	331.8	398.0	401.6	475.1
Sales tax ..	Economic Survey	187.0	229.7	258.5	268.4	333.9	309.0	464.2	480.1	511.7
	Pakistan Budgets	*n.a.*	*n.a.*	*n.a.*	268.4	333.8	309.0	467.1	503.6	555.5
	CBR	193.1	219.7	257.8	273.0	326.5	332.3	478.5	500.3	555.7

Notes: *a*) Figures for 1962/63 in case of *Pakistan Budgets* and *Economic Survey* are revised estimates.

b) 1958/59 is a fifteen-month fiscal year.

Sources: *i*) CBR figures are from the unpublished data provided by the CBR which are being used in the present paper (*see*, Appendix Tables A-4 to A-8).

ii) Economic-Survey figures are taken from Table Nos. 72, 74 and 76 in *Economic Survey*, 1963-64, [4]. Provincial shares in import duty, central excise duty and sales tax are added to the Central receipts of the respective taxes. Figures on customs revenues are shown in *Economic Survey*. The export-duty collections are deducted from these to arrive at the import-duty figures. Import and sales taxes are adjusted for refund to Indus Basin Development Fund.

iii) Pakistan-Budget figures are taken from *Pakistan Budgets*, 1963-64, [5, Pp. 16-19]. These figures are not adjusted for refund to Indus Basin Development Fund.

cases in which the differences are very large, particularly in recent years. The CBR data are from monthly collections, by groups of commodities. Adjustments and appeals made are not likely to be recorded in the detailed records and, therefore, the final accounts figures after adjustments will differ from the figures of actual collections over a specified period, which we are using. The major adjustment is for Indus Basin Works imports. Adjustments are not given by commodity group, so we have used the CBR data without any change. This omission should not seriously affect the conclusions.

The CBR tax data are classified into many different commodity groups. These commodity classifications vary among taxes and have varied for some taxes over time. Prior to 1960/61, the data on import duties were classified according to forty-three commodity groups. For 1960/61 and later years, a different classification with forty commodity groups was adopted. The data on excise duties and sales taxes on domestic manufactures are broken into seventeen and thirty-three commodity groups, respectively. The classification for these two types of taxes did not change over the period of our study (1954/55 to 1962/63). The sales tax data on imports are reported separately for commodities taxed at below and above the level of the general rate. There are twenty-three categories at the general rate, twelve categories below the general rate and sixteen categories above the general rate. Export duties and sales taxes on exports are reported by all major dutiable commodities. Almost every tax has one entry termed "miscellaneous or articles not classified elsewhere". The treatment of duties collected on government purchases is different for different taxes. For excise taxes, sales taxes on domestic manufactures, sales taxes on imported commodities below the general rate and import duties, the government account is not shown separately. In case of sales tax on imports at the general rate, the government tax liability is shown as a separate category except for 1962/63 when the total is broken and treated like private imports. For the sales tax on imports above the general rate, the government account and miscellaneous category are lumped together.

The original CBR data and classifications are not being reproduced here. For purposes of this study, the CBR data have been reclassified in two different ways. *First*, the data have been rearranged according to thirty-three commodity groups[6]. *Second*, the data have been grouped according to major utilizaton in the economy. The latter groups are consumption goods, raw materials, capital goods, and government and miscellaneous goods. Raw materials are divided into those intended for

[6]The key to this reclassification is not being published as it would be meaningless without the raw data. It is available from the Institute for anyone desiring it.

the consumption-goods and for the capital-goods industries. The government and miscellaneous accounts are treated together (and separately from other groups) not because of any analytical usefulness but simply because of our inability to distribute these into the other categories. Our classification is similar to the one used by Economic Commission for Asia and the Far East (ECAFE) as modified by the Planning Commission of the Government of Pakistan. It differs primarily because the basic industrial breakdown available in the revenue data is not as fine as would be necessary to follow exactly the same pattern[7].

III. INCIDENCE OF INDIRECT TAXES: A QUESTION OF INTERPRETATION

Before discussing the evidence, a note of caution is in order. Although these data have been classified by industry of origin and type of good, it is *not* possible to move directly to the conclusion that either the user *or* the producer has been taxed to the extent of the revenue raised, *or* the same division would be correct for all goods. The incidence, or final resting place, or identification of "who really suffer reduced real income" from the imposition of indirect taxes has certainly not been settled in either the theoretical or the empirical literature on indirect taxes. A convenient way to think of the revenue from indirect taxes is set out here.

Indirect taxes are taxes on certain events (or flows), such as the production, sale, import, or export of commodities. What we have done in the classification system is to organize the collections of revenue by different kinds of events. Thus, revenue from import taxes on iron and steel represents the receipts from a charge on the import flow of a particular kind of good. The question of who suffers a loss of real income because of the tax is irrelevent in the first instance. Likewise, the structure of indirect tax revenue by commodity groups changes over the period covered. No immediate inference can be drawn from the changes in the revenue structure about the changes in the flows of real income from different parts of the private sector that must accompany those changes in revenue structure.

A simple illustration of the above point is necessary, even though it is in terms of partial-equilibrium arialysis. Suppose that many flows of goods are regulated by direct government control or licensing, a situation largely true in Pakistan. Imports, even after the recent liberalizations but certainly in the period covered by our study, are strictly rationed almost without regard to market pressure within Pakistan. For any given type of

7The classification of commodity groups in the Appendix tables into type of goods is as follows: consumption goods: 1-18, 24; raw materials for consumption goods: 20-23, 24; raw materials for capital goods: 19, 30, 31.

good, say diesel oil, the additional supply is fixed by licensing for any period of time. If the supply is limited to a quantity well below that which would be demanded at a price representing *c.i.f.* price *plus* duty *plus* "normal" wholesale margins, then the market price will be much higher than the "normal" price. If, demand and tax rates remaining constant, imports of diesel oil were increased, revenue from import duties on diesel oil would rise, but there would be a *fall* in the price of diesel oil in internal markets. More revenue would be associated with *lower* prices and larger supplies.

Another feature of duties under licensing can be illustrated from the same example. Still assuming a situation in which imports are restricted tightly, suppose there is an increase in rate of import duty. If the supply or flow of imports is not reduced, the price in internal markets would not rise. Thus, the entire transfer of real income from the private sector associated with the increased duty would come out of the windfall profit previously going to the import licensees who received diesel at well below its opportunity costs in Pakistan. An increase in revenue that comes from an increase in the rate of duty without any change in underlying flows of goods *may* fall on the real income of the importing sector that has its flow of goods regulated by physical controls, rather than on the final consumers of these goods[8].

Is the above situation one that can be generalized? We think it can be, but it is well beyond the scope of this paper to do so. What one might suggest, however, is the following line of thought: if most major sectors of an economy are regulated by direct controls and a system of licensing (such as for capital investment and imports, as in the case of Pakistan) it may be that indirect taxes have little effect on relative prices. If such were the case, indirect taxes could not, in general, be shifted forward by sellers by altering their final-product prices. This certainly seems to be the case in most of the import sector at the present time. In addition, since many domestic manufacturing sectors are thought to operate at less than full capacity *due to limitation of supplies of imports*, the prices of their final products represent an indirect scarcity premium on imported goods[9]. Thus, if we imposed

[8]The tax can reduce the real incomes of the using sector only if the importing sector cuts back its imports (or sales) after the imposition of the tax. The cutback in imports would come only if the indirect tax were large enough to wipe out the entire windfall going to the importing sector.

[9]This case is not a simple one for a number of reasons. *i*) With absolute physical limits on certain imports into a country, it is not at all clear what sort of implicit cost function faces the import-using firm. *ii*) Where producers are not their own importers they must pay scarcity value directly for imports that are imported, and their cost structure will probably differ from industrial import licensees. *iii*) When possibilities of monopoly position within internal markets are added, the conditions under which increased duties under "tight" licensing of imports do and do not affect final market prices become even more difficult to specify. *iv*) Because of possible alternative uses of imported inputs, the change in duties on imports might shift inputs from one to another using sector, thus, altering relative supplies, and relative prices of final products.

a sales or excise tax on the domestically produced goods, and if supply was not changed, *i.e.*, if the existing scarcity premium was sufficiently high, even the final prices of these goods would not change[10]. Indirect taxes in a system governed primarily by direct supply limitations may have simple incidence properties: they reduce prices received by the supplying sector without changing prices paid by the using sector. If this is in fact the case, then the worries about the effect of increased rates of duties on the prices of items of daily use are not well founded. However, in this paper we can only raise the issue as one which seems worthy of further detailed examination and point out that increased flows of revenue are very difficult to attribute to the decreased real income of any particular part of the private sector without study of specific cases. In particular, it would be unwise to conclude that increased revenue from certain kind of events, such as production of consumer necessities, represented a reduction in the real income of the consumer[11].

Unfortunately, a more complete analysis of the data presented here is not yet possible due to lack of supporting information. Changes in revenue from indirect taxes can be broken into changes in three related variables: base, rate, and compliance or coverage. By changes in *base* we mean changes in the flows of production, sale, or import of the goods in question. In different language, this means the change in the rate at which certain events take place. Changes in *rates* would mean changes in the assessment per-unit flows, or per event. Changes in *compliance* would mean either a change in the evasion by individuals or concerns, or a change in the tax definition of events that are dutiable. Changes in rate structure are analysed in another study [9]. Changes in the basic flows of goods are not easily ascertainable from available information. For the present, since there is no published information on revenue structure within central indirect taxes, we will confine ourselves to a descriptive discussion of the facts of these structural changes. A detailed "causal analysis" must be postponed until the complementary studies have been completed.

IV. MAJOR CHANGES IN INDIRECT TAX REVENUE[12]

Basic summary data on revenue from central indirect taxes for the past nine years are given in Tables II and III. Revenue from all indirect taxes

10Again, specifying the exact conditions under which no change in supply would occur with a change in the demand facing firms (after the imposition of sales or excise duties) is very ticklish but if existing "monopoly prices" based on the scarcity of imported inputs are sufficiently high, we think little if any change in supply will take place *even if* there is a monopolistic market as well as import-based scarcity.

11Preliminary evidence that such a mechanism operates can be found in a study by A. R. Khan [1]. Items included there showed falling relative prices, accompanying increased production, even though tax rates were increasing.

12We have used abbreviations in the text and tables. They are X for export duties, M for import duties, EX for excise duties and SLX, SLM and SLD for sales taxes on exports, imports and domestic production, respectively. The total taxes on exports are X + SLX, on imports M+SLM and on domestic production EX+SLD.

TABLE II

REVENUE FROM CENTRAL INDIRECT TAXES IN PAKISTAN: 1954/55—1962/63
(Summary Table)

Taxes	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
	(.....*in thousand rupees*.....)								
X + SLX	128.551	209,359	168,150	134,953	141,464	129,857	78,755	96,015	112,485
EX + SLD	263,422	288,985	324,534	373,189	499,467	527,195	640,193	647,858	732,681
M + SLM	464,117	546,302	533,174	551,273	508,615	549,117	782,567	913,065	1,051,951
Total	856,090	1,044,646	1,025,858	1,059,415	1,149,546	1,206,169	1,501,515	1,656,938	1,897,117
D + M (Subtotal)	727,539	835,287	857,708	924,462	1,008,082	1,076,312	1,422,760	1,560,923	1,784,632
INDICES									
X + SLX	99.0	161.2	129.4	103.9	108.9	100.0	60.6	73.9	86.6
EX + SLD	50.0	54.8	61.6	70.8	94.7	100.0	121.4	122.9	139.0
M + SLM	84.5	99.5	97.1	100.4	92.6	100.0	142.5	166.3	191.6
Total	71.0	86.6	85.0	87.8	85.3	100.0	124.5	137.4	157.3
D + M (Subtotal)	67.6	77.6	79.7	85.9	93.7	100.0	132.2	145.0	165.8
PERCENTAGES									
X + SLX ÷ TOTAL	15.0	20.0	16.4	12.7	12.3	10.8	5.2	5.8	5.9
EX + SLD ÷ TOTAL	30.8	27.7	31.7	35.3	43.4	43.7	42.6	39.1	38.6
M + SLM ÷ TOTAL	54.2	52.3	51.9	52.0	44.3	45.5	52.2	55.1	55.5
SELECTED INDICES									
EXPORTS	66.4	96.8	87.2	77.2	71.9	100.0	97.6	100.0	110.4
INDUSTRIAL PRODUCTION	60.5	72.1	79.0	83.9	91.7	100.0	107.3	118.9	133.3
IMPORTS	44.8	53.8	94.9	83.3	64.1	100.0	129.5	126.3	155.5

Notes: a) X is export duty; EX is excise duty; M is import duty; SLX, SLD and SLM are sales taxes on exports, dometic production and imports, respectively.
b) 1958/59 is a fifteen-month fiscal year.

Sources: i) Tax revenue: *See*, Appendix Tables.
ii) Exports and imports: *Economic Survey*, 1963/64, [4, Appendix p. 57].
iii) Industrial production: *Economic Survey*, 1963/64, [4, Appendix p. 35. Revised (interim) index for 1950/61 to 1962/63].

TABLE III

REVENUE FROM CENTRAL TAXES ON IMPORTS AND DOMESTIC PRODUCTION: 1954/55—1962/63
(SUMMARY TABLE)

Taxes	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
	(.....*in thousand rupees*.....)								
EX	170,200	189,700	207,100	237,500	307,500	331,800	398,000	401,600	475,100
SLD	93,222	99,285	117,434	135,689	191,967	195,395	242,193	246,258	257,581
M	366,883	428,654	395,441	415,611	375,500	414,320	549,298	663,589	761,442
SLM	97,234	117,648	137,773	135,662	133,115	134,797	233,269	249,476	290,509
TOTAL (D+M)	727,539	835,287	857,708	924,462	1,008,082	1,076,312	1,422,760	1,560,923	1,784,632
INDEXES									
EX	51.3	57.2	62.4	71.6	92.7	100.0	119.9	121.0	143.2
SLD	47.7	50.8	60.1	69.4	98.2	100.0	124.0	126.0	131.8
M	88.6	103.4	95.4	100.0	90.6	100.0	132.6	160.2	183.8
SLM	72.1	87.3	102.2	100.6	98.8	100.0	173.0	185.1	215.5
TOTAL (D+M)	67.6	77.6	79.2	85.9	93.7	100.0	132.2	145.0	165.8
PERCENTAGE									
EX ÷ TOTAL (D+M)	23.4	22.7	24.1	25.7	30.5	30.8	27.9	25.7	26.6
SLD ÷ TOTAL (D+M)	12.8	11.9	13.7	14.7	19.1	18.2	17.0	15.8	14.4
M ÷ TOTAL (D+M)	50.4	51.3	46.1	44.9	37.2	38.5	38.6	42.5	42.6
SLM ÷ TOTAL (D+M)	13.4	14.1	16.1	14.7	13.2	12.5	16.5	16.0	16.4

Notes: a) EX is excise duty; M is import duty; SLD and SLM are sales taxes on domestic output and imports, respectively.
b) 1958/59 is a fifteen-month fiscal year.

Source: See Appendix Tables A-1 to A-8.

rose 121 per cent, from 856 million rupees in 1954/55 to 1,897 million rupees in 1962/63. This rise was due to increases of 178 per cent in tax revenue from domestic production (EX+SLD) and 127 per cent in taxes on imports (M+SLM). Because of these different rates of change the revenue structure in recent years is quite different from that in the years immediately preceding the advent of the First Plan. In recent years, revenue from taxes on imports is a slightly larger share than it was in the early years of the First Plan, and has provided more than 50 per cent of the central indirect taxes. The major changes have been: *i*) the decreased importance of taxes on exports which fell from one-sixth to one-twentieth of the total; and *ii*) the increased importance of taxes on domestic industrial production which rose from under 30 to about 40 per cent. It should also be pointed out that most of the increase in revenue from import duties came about after 1959/60. At the end of the first-plan period, taxes on domestic production were almost as large as taxes on imports.

Though we cannot explore all the causes for the change in revenue structure here, a few obvious hypotheses might be suggested. The most simple would be that revenue derived from taxes on basic flows of goods would vary directly with the flows themselves. This is true in the case of taxes on domestic production, as can be seen from the roughly parallel movements of indexes of both taxes and industrial production. However, we must point out that from 1959/60 to 1960/61 the basic rate of sales tax was raised by 25 per cent while the index of industrial production rose by 7 per cent, but tax revenue rose only by 21 per cent. In the next year, production rose by 11 per cent but revenue increased only by 1.5 per cent. The fact that changes in base and rate combined were considerably more than changes in revenue raises serious questions about the adequacy of coverage of indirect taxes. Revenue from these taxes was rising less rapidly than real output. If we were to allow for some rise in prices, these taxes would be even less elastic with respect to current-price output. This state of affairs bears further investigation.

Both taxes on exports and the value of exports have varied considerably from year to year. The variation in revenue generally has been greater than the variation in the value of exports. This should be expected, since the rates of duties were usually varied in the same direction as changes in world prices and, in addition, only a few of the major export commodities are dutiable. The decline in both the absolute and the relative amounts of revenue from export-related taxes is due to the joint effects of decreased rates of duty and the decrease in the absolute amount of exports of cotton, a major dutiable commodity. Tax revenue from imports and value of imports did not even move in the same direction in a number of years. This is due in part to changing structure of imports, and in part to widely different

rates for different commodities. There was a major change after 1959/60 when, with the acceleration in imports accompanying large aid and more development expenditure and the changes in the duty structure and basic rate of sales tax, revenue from taxes on imports rose 90 per cent in three years and increased by 10 percentage points in importance among the indirect taxes. As is shown in the next section, this was caused, or at least accompanied, by a rapid shift in the importance of different commodity groups in import-tax revenue.

A brief look at the individual taxes that make up the total tax revenue on imports and on domestic production is in order, particularly since the budget and other documents list these revenues in very different forms. A summary is given in Table III. The excise and import duties are the dominant parts of the revenue from taxes of domestic and imported goods, respectively. Sales-tax revenue from imports grew by 199 per cent and increased in relative importance both in total import-tax revenue and in the subtotals from both domestic and import flows. Revenue from the import duty fell in relative importance with respect to all three other taxes over the period. Once again, we find a difference between the pre- and post-1959/60 years with an extremely rapid increase in import-duty revenue and an increase of 115 per cent in sales-tax revenue from imports in the last three years. Both sales-tax revenue from domestic output and excise-duty revenue grew at approximately the same rates over the entire period. The differential rates of increase of revenue between the sales tax on imports and the sales tax on domestic products and between import duties and sales taxes on imports point up the misleading nature of the classification adopted for budgetary purposes which obscures these movements. In order to get a proper perspective on the relative importance of taxes on different flows of goods and services in total revenue, the sales-tax receipts must be divided into those falling on exports, imports, and domestic production and the customs duties separated into import and export duties. This is the only way any useful kind of analysis can be made. We hope that care will be taken soon to provide such a breakdown in official documents.

In summary, the increase that took place in indirect tax revenue during the first-plan period was due primarily to the rise in collections from domestic manufactures, accompanying the rise in production locally. During the second-plan period, however, there were sharp increases in revenue from domestic as well as imported goods. This resulted not only from substantial increases in the basic rates of duty on both types of flows but also from the continued growth of domestic industrial output and a much more rapid growth in imports.

V. CHANGE IN REVENUE BY INDUSTRIAL GROUPS

Accompanying the observed changes in the structure of revenue by type of flow taxed, there have been substantial changes over the period in the relative importance of revenue from taxes of different commodity groups. Once again, the period is divisible into two parts at 1959/60 for most commodities. Table IV gives a summary of the major industrial groups at the beginning and the end of the period for taxes on imports and domestic production, combined and separately. We have shown the share of revenue of the specified taxes due to each industrial group, giving on the left side the major groups in 1954/55 and on the right side the major groups in 1962/63. For convenience, the share of the industrial groups in the other year is provided for comparison. We have taken only those industries that have provided 4 per cent or more of the revenue in the beginning or end year.

In terms of concentration of revenue on a few commodities, all indirect taxes and those on production and imports separately improved (became less concentrated) over the period covered. The movement towards less concentration in revenue is more evident in taxes on imports than in taxes on domestic output. The three commodity groups most important in tax revenue from domestic production remained the same at both ends of the period covered. In fact, their share was not much smaller in 1962/63 than it was in 1959/60. These same three groups of commodities, (petroleum products, textiles except silk, and tobacco products) were also most important in collections of indirect taxes on both imports and local production. In fact, "textiles except silk" remained in the first position of importance by a considerable margin in both groups. This is due of course to *i*) the heavy weight of textiles in the total consumption of manufactured goods in Pakistan throughout the period, and *ii*) the replacement of heavily taxed imports with a higher volume of less heavily taxed domestic production.

Both a major change in import composition and some change in the rates of import duties are reflected in revenue from import taxes. The three commodities important to revenue in 1954/55 (textiles, petroleum products, and sugar) were replaced by three categories of goods falling in the "heavy industry" or the "producer-goods" sector: basic metals and their manufactures, electrical machinery, and machinery except electrical. In addition, there were increases in the importance of two items of transport equipment (cars, scooters and buses and other transport materials) in the revenue yield of taxes on imports.

Other changes in revenue structure between the end years are obvious from the table and will not be laboured here. One other "structural" change that is important in this preliminary analysis is, again, the difference between the pre- and post-1959/60 years. In the table, all the items marked with the asterisk show a "kink" in their behaviour at 1959/60. For those that increased in importance, the asterisk indicates a more rapid growth in their share in revenue since 1959/60. Thus, it is quite obvious that the rapid increase in taxes on imports that was noted in the last section was accompanied by very sharp changes in the structure of revenue from import-related taxes. Since the items that increased sharply in importance were those with relatively low duties, the change in revenue structure is probably a reflection of the more fundamental change in import structure associated with accelerated development and aid-financed import "liberalization" during the second-plan period[13].

Within certain industrial groups there were further changes beyond those indicated in the table. The textile group has an asterisk for both imports and domestic production, but not for the total. The share in taxes on domestic production rose up to 1959/60 and declined afterward, while textiles' share in duties on imports declined up to 1959/60 and rose afterward. These changes were most probably due to *i*) the effect of the Export Bonus Scheme which deflected output away from taxable domestic uses, *ii*) increases in duties on other domestic output after 1959/60, and *iii*) increases in rates of duties on imports of textiles after 1959/60. Revenue from imported sugar showed a similar kinked behaviour falling up to 1959/60 with import substitution and tight licensing, and rising after 1959/60.

While a complete analysis of taxes on all major industrial groups must await the compilation of basic data on flows of goods, a tentative summary of the change in importance of various commodity groups is given here. The changes in the structure of revenue by major industrial commodities taxed were greatest in the taxes on imports, where the increase in the share of taxes on heavy industrial goods was very rapid after 1959/60. Textiles, tobacco, and petroleum have been and continued to be the major commodities from the point of view of revenue, largely because of their very heavy weight in taxes on domestic production. Whether or not the Taxation Enquiry Commission's fear [8, p. 176] is justified that revenue from domestic production of import substitutes would "adequately" replace revenue from import duties is not clear from these data. It is also not clear what criteria for a "proper" level of taxation of these goods would be, particularly in

[13]An additional factor is the reduction in the size of the "miscellaneous and government" category in the revenue accounts after 1959/60. The underlying changes, however, are still too important to be obscured by this statistical failing.

TABLE IV

SHARE OF COMMODITY GROUPS PROVIDING LARGEST REVENUE: 1954/55 and 1962/63

I. Excise, Sales and Import Duties Combined (per cent of total for given year)

	1954/55	(1962/63)		(1954/55)	1962/63
10) Textiles except silk	22.3	(16.2)	10) Textiles except silk	(22.3)	16.2
26) Petroleum products	14.2	(11.0)	26) Petroleum products	(14.2)	11.0
8) Tobacco products	11.1	(8.5)*	8) Tobacco products	(11.1)	8.5*
Subtotal:	47.6	(35.7)	Subtotal:	(47.6)	35.7
	9.2	5.6	29) Basic metal mfg.	(2.4)	8.4*
			31) Elect. machinery	(1.1)	6.4*
	56.8	(41.3)	30) Machinery except elect.	(3.5)	5.7*
			4) Sugar	(9.2)	5.6
			Total:	(63.8)	61.8

II. Excise and Sales Taxes on Domestic Production (per cent of total for given year)

	1954/55	(1962/63)		(1954/55)	1962/63
10) Textiles except silk	31.9	(28.5)*	10) Textiles except silk	(31.9)	28.5*
8) Tobacco products	22.6	(19.0)	8) Tobacco products	(22.6)	19.0
26) Petroleum products	10.2	(14.4)*	26) Petroleum products	(10.4)	14.4*
	64.7	(61.9)	Subtotal:	(64.7)	61.9
3) Salt	9.7	(1.7)*			
25) Ginned cotton	5.3	(2.0)	27) Cement	(1.7)	5.5*
			24) Vegt. products	(2.5)	4.7*
	79.7	(65.6)	4) Sugar	(3.8)	4.2
				72.7	76.3

III. Import Taxes and Sales Taxes on Imports (per cent of total for given year)

	1954/55	(1962/63)		(1954/55)	1962/63
10) Textiles except silk	16.9	(7.5)*	29) Basic metals & mfg.	(3.5)	13.11
26) Petroleum Products	16.4	(8.6)*	31) Elect. mfg.	(1.5)	9.9*
4) Sugar	12.3	(6.5)*	30) Machinery except electrical	(5.5)	9.7*
Subtotal:	45.6	22.6		(10.5)	32.7

(*Contd.*)

TABLE IV—(*Contd.*)

6) Silk and silk textiles	5.5	(0.1)*	26) Petroleum products	(16.4)	8.6*
30) Machinery except electrical	5.5	(9.7)	19) Cars, scooters, buses	(3.4)	7.6*
8) Tobacco products	4.6	(1.2)	10) Textiles except silk	(16.9)	7.5*
			4) Sugar	(12.3)	6.5*
	61.2	33.6			
			28) Transport materials	(2.6)	6.4*
				(62.1)	69.3

*Indicates a more rapid change in the share of the starred commodity groups in the total taxes of the type specified since 1959/60 than before 1959/60.

Source: *See*, Appendix Tables A-1 and A-3. Numbers refer to commodity groups in our classification given in Appendix Tables.

light of the licensing in all sectors previously and in many sectors currently. Much further study of this process and of the basic data on price, output, absorption, and profit movements is necessary before any conclusion can be reached.

VI. CHANGE IN REVENUE STRUCTURE BY END-USE OF GOODS

In addition to the question of identifying the industrial products that yield revenue from their manufacture, sale, or import, there is also some interest in the *type* of good which is taxed. Do the taxes on consumption goods, raw materials, or capital goods yield most of the revenue? What has been the change in the revenue structure if we use such a classification? We have given some preliminary figures in this section but an additional note of caution should be mentioned. *First*, the classification scheme is quite crude, and even though *most* of a given category (such as textiles other than silk) might be clearly consumer goods, there are some raw materials and "capital goods" included. *Second*, one could easily quarrel with the Planning Commission-ECAFE classification of these goods[14], particularly the distinction between raw materials for capital goods and those for consumer-goods industries. We have tried to ease the problem somewhat by providing two alternatives to the reader. The revenue is classified by *i*) consumer goods including their raw materials, and capital goods including their raw materials, and *ii*) consumer goods, capital goods, and raw materials separately. It will be seen that regardless of the definition, one prefers certain basic changes have occurred in the structure of revenue.

In Table V, we have given the distribution of revenue according to the use of the commodities for imported and locally produced goods.

[14]The classification scheme appears as an appendix to [7].

TABLE V

PERCENTAGE DISTRIBUTION OF REVENUE FROM COMMODITIES BY END-USE

	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
EX+SLD+M+SLM									
Consumption goods and R.M.	62.5	55.3	57.3	54.0	54.0	53.7	52.5	52.4	49.9
Capital goods and R.M.	25.5	21.8	26.8	28.3	28.8	25.7	33.9	36.7	42.1
Consumption goods	56.8	51.0	52.0	49.4	49.2	48.8	47.9	47.1	44.8
Raw materials	24.5	21.4	25.1	25.5	25.7	22.3	27.5	29.5	30.6
Capital goods	6.8	4.6	7.0	7.4	7.9	8.3	11.0	12.5	16.7
EX+SLD									
Consumption goods and R.M.	34.9	86.5	85.2	82.5	82.1	84.7	80.6	78.9	73.5
Capital goods and R.M.	12.9	11.8	12.3	13.3	13.8	11.2	15.9	17.5	23.1
Consumption goods	78.4	81.0	79.3	77.4	76.9	79.9	76.0	74.6	68.4
Raw materials	18.9	16.8	17.7	17.3	17.5	15.0	19.4	20.7	26.5
Capital goods	0.5	0.5	0.6	1.1	1.4	1.0	1.1	1.2	1.6
M+SLM									
Consumption goods and R.M.	50.2	39.2	40.4	34.5	26.4	23.8	29.6	33.7	33.6
Capital goods and R.M.	32.8	27.2	35.7	38.6	43.6	39.4	48.6	50.2	55.3
Consumption goods	44.8	35.5	35.4	30.3	22.5	18.8	24.9	27.7	28.2
Raw materials	27.8	24.1	29.7	30.9	33.4	29.3	34.2	35.7	33.5
Capital goods	10.4	6.8	11.0	11.8	14.2	15.1	19.1	20.5	27.2
IMPORTS									
Consumption goods and R.M.	*n.a.*	*n.a.*	*n.a.*	49.3	41.1	42.0	44.1	38.0	37.6
Capital goods and R.M.	*n.a.*	*n.a.*	*n.a.*	50.8	58.8	58.0	55.9	61.9	62.3
Consumption goods	*n.a.*	*n.a.*	*n.a.*	41.9	30.7	29.6	31.0	23.4	24.4
Raw materials	*n.a.*	*n.a.*	*n.a.*	23.2	29.4	30.2	31.0	29.6	25.7
Capital goods	*n.a.*	*n.a.*	*n.a.*	35.0	39.8	40.2	38.0	46.9	49.8

Notes: a) EX is excise duty; M is import duty; SLD and SLM are sales taxes on domestic production and imports, respectively. Totals do not add to 100 because of miscellaneous and government accounts.

Sources: *i)* The data from Appendix tables.
ii) Imports: [7].

Despite the crude classification system and the fact that a fairly large percentage of taxes on imports fell into the "miscellaneous and government" category, it is quite clear that the same changes pointed out in the previous section are reflected here too. In total revenue from taxes on imports and domestic production, the share of consumption goods and consumption-oriented raw materials declined continuously, and the share of capital-goods taxes rose. The latter change is particularly marked after 1959/60. We must point out that the basic classification scheme for revenue changed in 1959/60, eliminating a substantial part of the miscellaneous category. But the underlying trend is quite strong, as indicated by the increase of the share of capital goods and raw material in each year under the new classification.

Taxes on domestic output also exhibit characteristics similar to those suggested in the last section. Though the share of consumption goods and their raw materials is much higher in revenue from domestic taxes than from import-based taxes, their share in domestic-output taxes declined over the period. The share of tax revenue from capital-goods production, and particularly production of their raw materials, increased concommitantly. Again there is a more rapid rate of change of the share after 1959/60 than before.

Within the revenue from taxes on imports, the relative shares of taxes on consumption and capital goods change very sharply over the period, as was suggested in the last section. The relative position of consumption- and capital-goods taxes in total revenue was reversed, when taxes on raw materials are included with taxes on the using sector. Examining the revenue by types of goods separately, there was a rise in the share of raw-material taxes, but a much more rapid rise in the share of capital-goods taxes, accompanied by a fall in the share of consumer-goods taxes. The data on percentage distribution of imports classified by end-use of goods for 1957/58 to 1962/63 is also given in Table V for comparison. It can be seen that the changes in the revenue structure are a reflection of the changes in structure of imports. However, since the share of taxes on capital goods and their raw materials rose more rapidly than did these goods' share in the basic flow of imports, we can infer that there was a significant impact on revenue due to the revised tariff schedule and changes in the rates of sales tax on imports after 1959/60.

The additional classification according to type of use of commodity adds very little to the knowledge of import-tax revenue structure gained in the last section. The basic conclusions remain. There has been a shift *within* tax revenue, both on imports and on domestic industrial production over the period studied. The share of revenue provided by taxes on heavy industrial goods and industrial raw materials has risen, while the share provided by light and consumer-goods industries has declined. This was

due both to changes in the structure of imports and domestic industrial production and to changes in the rate of taxes on these flows of commodities.

VII. CONCLUSION

The changes in revenue receipts from indirect taxes in Pakistan over the past nine years have been summarized at each stage of this paper, and there is little need to repeat them here. However, we would like to point up some questions which remain open and bear much further investigation.

First is the question of the elasticity of the central indirect taxes by commodity groups, with respect to the change in the underlying flows of goods.

Second, as mentioned in Section III, is the problem of identifying, when possible, the sectors or subsectors of the economy that have (short-run?) reductions in real incomes due to the system of indirect taxes.

Third is the more general question of the effect of indirect taxes on the relative prices of the commodities taxed. We have pointed out above that this is a somewhat different problem in an economy in which licensing of production, investment, and imports is prevalent than it is in a relatively "free" economy.

Fourth is the projection of revenue from indirect taxes into the third-plan period. Since the preliminary outlines for the Third Plan have suggested an additional 3,000 million rupees of tax revenue will be needed to offset the projected increase in government expenditure not financed abroad, it is essential to obtain some estimates and some understanding of the revenue implications of the other aspects of the Plan targets under various assumptions about the rates of taxation.

Finally, since there are two basic alternatives to increased indirect taxes on production and imports, *i*) increased income and corporation taxes, or *ii*) increased land taxes, the effects of these alternative types of taxes must be compared with the likely impact of indirect taxes, both with respect to past performance and with respect to future revenue, price and income distribution effects.

In pointing out the major changes that have taken place in the revenue structure and by suggesting some of the implications of these changes, we hope that more attention will be paid to the impact of these taxes which yield three times the combined revenue of all other taxes in Pakistan. This large subsector of the public economy has too long been neglected, and we hope the interest of analysis in this problem will be more serious in the future.

REFERENCES

1. Khan, Azizur Rahman, "Import Substitution, Consumption Liberalization and Export Expansion", *Pakistan Development Review*, Vol. III, No. 2, Summer 1963.

2. Lews, S. R. and R. Soligo, "Growth and Structural Change in Pakistan's Manufacturing Industry, 1954 to 1964", *Pakistan Development Review*, Vol. V, No. 1, Spring 1965.

3. Pakistan, Central Board of Revenue, Statistical Office, *Annual Customs and Central Excise Administration Report*, 1954/55, 1955/56, 1956/57. (Karachi: Manager of Publications, 1958, 1959, 1960).

4. Pakistan, Economic Advisor to the Government of Pakistan, *Pakistan Economic Survey*, 1963-64. (Karachi: Manager of Publications, 1964).

5. Pakistan, Economic Advisor to the Government of Pakistan, *Pakistan Budget*, 1963-64. (Karachi: Manager of Publications, 1964).

6. Pakistan, Planning Commission, *Mid-Plan Review: Evaluation of Progress during the First Three Years of the Second Five-Year Plan.* (Karachi: Manager of Publications, May 1964).

7. Pakistan, Planning Commission, Economic Research Section, *A Revised Balance of Payments*, 1960/61—1962/63. Mimeographed. (Karachi: Planning Dominission, April 1964).

8. Pakistan, Taxation Enquiry Commission, *Taxation Enquiry Commission Report*, Vol. I. (Karachi: Manager of Publications, 1963).

9. Radhu, Ghulam Mohammad, "The Rate Structure of Indirect Taxes in Pakistan", *Pakistan Development Review*, Vol. IV, No. 3, Autumn 1964.

10. Sarfraz, Nighat, *Problems of Budgetary Reform in Pakistan.* (Karachi: Pakistan Institute of Development Economics, 1961).

Appendix A

TABLE A-1—

EXCISE PLUS SALES TAX ON DOMESTIC OUTPUT PLUS IMPORT PLUS SALES TAXES ON IMPORTS ALL PAKISTAN

Description	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
	(.....*in thousand rupees*.....)								
1) Soap, toilets and cosmetics	22,10	33,12	25,48	39,46	47,21	1,49,69	1,83,76	1,92,03	2,20,76
2) Matches and other explosives	75,05	83,01	1,00,03	1,09,02	1,19,01	1,87,00	1,97,85	2,01,84	1,64,01
3) Salt	2,55,00	2,46,00	2,26,00	1,99,00	1,85,00	2,50,00	1,86,00	1,59,00	1,26,00
4) Sugar and sweetmeats	6,69,79	6,53,56	6,57,45	8,27,90	4,01,00	2,51,10	3,15,52	7,44,83	9,93,24
5) Medicines and chemical products	65,79	76,06	72,40	99,97	89,25	1,09,34	3,60,09	4,21,62	4,11,52
6) Silk, yarn and silk textiles	2,53,98	2,71,09	4,24,93	2,85,26	3,88,53	4,07,03	51,60	13,18	16,46
7) Glassware, china, *etc.*	15,05	19,69	26,91	26,71	38,55	44,91	2,52,12	1,92,48	2,84,36
8) Tobacco, cigars and cigarettes	8,06,48	8,81,75	9,86,72	10,29,07	12,19,33	11,65,80	11,69,11	12,49,88	15,17,19
9) Coffee, tea, spice and betelnut	94,70	95,16	96,22	84,67	1,09,74	87,42	4,40,64	3,65,93	3,03,28
10) All textiles other than silk	16,22,07	16,39,97	14,96,77	15,27,21	19,51,15	21,03,57	28,66,16	29,66,29	28,83,87
11) Spirits, wines, liquors, *etc.*	1,07,64	1,20,15	1,30,78	11,20,99	1,15,94	1,33,53	1,36,07	1,70,37	1,80,30
12) All precious stones and metals	3,78	5,40	3,99	4,71	5,14	4,79	33,11	40,06	45,06
13) Refrigeration and airconditioning equipment	1,56	3,31	11,21	7,78	7,59	10,72	14,27	9,65	8,25
14) Works of art	1	0	5	1	0	0	0	1	15
15) Arms and ammunition	1,33	1,70	2,70	2,58	2,23	3,23	15,49	19,33	24,33
16) Meat, fish and their preparation	50,37	52,14	53,96	41,06	45,54	60,95	97,45	1,01,07	1,42,77
17) Furniture and products thereof	18,74	24,98	21,52	21,54	32,72	35,44	45,22	15,85	63,66
18) Leather and products thereof	13,60	8,31	22,26	20,21	33,72	34,57	1,20,98	1,13,14	1,37,01
19) Cars, scooters, buses and parts	1,58,32	1,50,88	2,09,04	2,13,22	2,93,43	2,11,37	5,66,32	6,56,21	8,12,76

(Contd.)

TABLE A-1—(*Contd.*)

Description	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
20) Photographic and cinematographic	11,04	15,08	16,87	17,99	17,67	26,31	70,65	1,16,12	1,51,60
21) Paper, pulp and stationery	1,21,34	1,10,50	1,35,15	1,20,56	1,16,47	1,01,81	2,02,43	2,54,18	3,17,72
22) Paints, varnishes and dyes	32,28	19,20	20,17	25,92	50,42	59,71	1,14,06	1,62,45	1,50,67
23) Rubber and products thereof	1,17,27	98,11	1,38,99	1,33,31	1,29,83	1,80,65	1,20,24	1,63,43	1,53,06
24) Vegetables and products thereof	71,12	64,50	1,04,69	1,23,03	1,95,87	2,19,41	3,42,00	3,87,51	4,95,13
25) Ginned cotton, jute and hemp	1,39,07	1,20,61	1,43,94	1,25,06	1,45,34	1,55,74	1,49,88	1,36,92	1,50,65
26) Petroleum products, oils, *etc.*	10,31,51	10,40,40	12,10,48	13,41,57	14,63,15	13,53,65	16,38,77	16,74,97	19,62,92
27) Cement	45,24	37,00	49,34	65,04	1,11,01	67,33	3,14,91	3,59,23	4,05,83
28) Transport material and railway articles	1,18,49	1,01,34	1,29,98	1,32,07	1,64,74	1,63,70	3,07,35	5,20,18	6,73,59
29) Iron, steel and manufacture thereof	1,71,68	2,62,63	3,09,15	3,93,94	3,73,62	2,88,07	10,00,96	12,20,75	14,97,97
30) Machinery other than electrical	2,53,35	1,49,43	2,21,71	2,68,38	3,14,12	4,93,30	4,76,04	6,47,29	10,20,05
31) Electrical machinery	83,60	85,63	1,77,06	2,07,32	1,85,93	1,81,39	5,18,16	6,51,45	11,37,56
32) Government account	1,60,23	2,85,57	2,92,62	3,53,68	3,80,51	2,66,87	8,96,85	8,88,95	5,63,72
33) Miscellaneous	6,83,81	15,96,59	10,58,51	12,76,38	13,47,01	19,54,72	10,23,54	7,93,03	8,35,87
Total:	**72,75,39**	**83,52,87**	**85,77,08**	**92,44,62**	**100,80,82**	**107,63,12**	**142,27,60**	**156,09,23**	**178,46,32**

Source: Appendix Table A-2 *plus* A-3.

TABLE A-2

EXCISE DUTY PLUS SALES TAX ON DOMESTIC GOODS
ALL PAKISTAN

Description	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
	(.....*in thousand rupees*.....)								
1) Soap, toilets and cosmetics	14,71	21,64	17,43	31,48	41,80	1,40,15	1,21,34	1,39,88	1,43,50
2) Matches and other explosives	62,00	83,00	1,00,00	1,09,00	1,19,00	1,87,00	1,97,00	2,01,00	1,62,00
3) Salt	2,55,00	2,46,00	2,26,00	1,99,00	1,85,00	2,50,00	1,86,00	1,59,00	1,26,00
4) Sugar and sweetmeats	99,46	1,51,46	1,50,79	1,61,67	2,30,38	2,51,03	2,16,60	1,82,18	3,06,35
5) Medicines and chemical products	15,57	32,95	17,23	19,28	33,86	33,00	43,72	56,63	78,77
6) Silk, yarn and silk textiles	—	—	—	—	—	—	—	—	—
7) Glassware, china, *etc.*	2,47	1,99	2,98	2,28	4,07	6,05	3,96	1,98	3,23
8) Tobacco, cigars and cigarettes	5,59,00	7,02,00	7,74,00	8,63,00	11,04,00	10,54,00	10,64,00	11,08,00	13,89,00
9) Coffee, tea, spice and betelnut	68,00	60,00	70,00	55,00	96,00	78,00	4,17,00	3,50,00	2,82,00
10) All textiles other than silk	8,39,53	9,33,71	10,58,11	12,78,87	17,58,86	19,37,44	23,08,22	22,58,71	20,91,67
11) Spirits, wines, liquors, *etc.*	31,98	35,30	39,07	29,82	32,07	31,52	36,09	44,26	50,59
12) All precious stones and metals	1,82	1,91	1,88	2,01	3,73	97	47	33	80
13) Refrigeration and airconditioning equipment	—	—	—	—	—	—	—	—	—
14) Works of art	—	—	—	—	—	—	—	—	—
15) Arms and ammunition	—	—	—	—	—	—	—	—	—
16) Meat, fish and their preparation	—	—	—	—	—	—	—	—	—
17) Furniture and products thereof	3,27	3,97	5,22	4,29	12,27	10,58	8,62	10,62	11,06
18) Leather and products thereof	12,60	6,70	15,59	17,43	31,55	31,61	39,57	39,47	40,75
19) Cars, scooters, buses and parts	13	8	1	4	3,31	11,21	12,66	12,74	13,82

(*Contd.*)

TABLE A-2—(*Contd.*)

Description	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
20) Photographic and cinematographic	—	—	—	—	—	—	—	—	—
21) Paper, pulp and stationery	12,77	18,40	26,03	35,68	51,87	33,41	56,98	70,79	1,34,11
22) Paints, varnishes and dyes	4,07	6,35	7,48	10,92	37,73	41,65	44,20	50,13	51,24
23) Rubber and products thereof	14,63	13,61	13,81	20,82	25,10	23,27	39,72	25,94	24,84
24) Vegetables and products thereof	66,43	61,23	98,74	1,18,89	1,93,00	2,16,82	2,31,63	2,89,90	3,56,39
25) Ginned cotton, jute and hemp	1,39,00	1,20,60	1,43,94	1,25,06	1,45,34	1,55,74	1,49,88	1,36,92	1,50,65
26) Petroleum products, oils, *etc.*	2,70,00	2,73,00	2,97,00	3,71,00	4,76,00	4,47,00	5,11,00	5,56,00	10,54,00
27) Cement	45,24	37,00	49,34	65,04	1,09,97	67,31	3,41,91	3,59,23	4,05,83
28) Transport material and railway articles	—	—	—	—	—	—	—	—	—
29) Iron, steel and manufacture thereof	11,70	15,22	34,41	19,08	32,70	24,22	1,24,39	1,44,64	1,19,30
30) Machinery other than electrical	—	—	—	—	—	—	—	—	—
31) Electrical machinery	12,03	14,11	20,79	42,44	64,97	42,41	56,45	67,39	99,26
32) Government account	—	—	—	—	—	—	—	—	—
33) Miscellaneous	56,81	49,62	75,49	1,45,79	2,02,19	1,97,56	2,17,53	2,12,84	2,31,65
Total:	**26,34,22**	**28,89,85**	**32,45,34**	**37,31,89**	**49,94,67**	**52,71,95**	**64,01,93**	**64,78,58**	**73,26,81**

Source: Appendix Table A-4 *plus* A-6.

TABLE A-3

IMPORT DUTY PLUS SALES TAX ON IMPORTS

ALL PAKISTAN

Description	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
	(.....*in thousand rupees*.....)								
1) Soap, toilets and cosmetics	7,39	11,48	8,05	7,98	5,41	9,54	62,42	52,15	77,26
2) Matches and other explosives	13,05	1	3	2	1	—	85	84	2,01
3) Salt	—	—	—	—	—	—	—	—	—
4) Sugar and sweetmeats	5,70,33	5,02,10	5,06,66	6,66,23	1,70,62	7	98,92	5,62,65	6,86,89
5) Medicines and chemical products	50,22	43,11	55,17	80,69	55,39	76,34	3,16,37	3,64,99	3,32,75
6) Silk, yarn and silk textiles	2,53,98	2,71,09	4,24,93	2,85,26	3,88,53	4,07,03	51,60	13,18	11,46
7) Glassware, china, *etc.*	12,58	17,70	23,93	24,43	34,48	38,86	2,48,16	1,90,50	2,81,13
8) Tobacco, cigars and cigarettes	2,11,48	1,79,75	2,12,72	1,66,07	1,15,33	1,11,80	1,05,11	1,41,88	1,28,19
9) Coffee, tea, spice and betelnut	26,70	35,16	26,22	25,67	13,74	9,42	23,64	15,93	21,28
10) All textiles other than silk	7,82,54	7,06,26	4,38,66	2,48,34	1,92,29	1,66,13	5,57,94	7,07,58	7,92,20
11) Spirits, wines, liquors, *etc.*	75,66	84,85	91,71	91,17	83,87	1,02,01	99,98	1,26,11	1,29,71
12) All precious stones and metals	1,96	3,49	2,11	2,70	1,41	3,82	32,65	39,73	44,26
13) Refrigeration and airconditioning equipment	1,56	3,31	11,21	7,78	7,59	10,72	14,27	9,65	8,25
14) Works of Art	1	0	5	1	0	0	0	1	15
15) Arms and ammunition	1,33	1,70	2,70	2,58	2,23	3,23	15,49	19,33	24,33
16) Meat, fish and their preparation	50,37	52,14	53,96	41,06	45,54	60,95	97,45	1,01,07	1,42,77
17) Furniture and products thereof	15,47	21,01	16,30	17,25	20,45	24,86	36,60	5,23	52,60
18) Leather and products thereof	1,00	1,61	6,67	2,78	2,17	2,96	81,41	73,67	96,26
19) Cars, scooters, buses and parts	1,58,19	1,50,80	2,09,03	2,13,81	2,90,27	2,00,16	5,53,66	6,43,47	7,98,94

(*Contd.*)

TABLE A-3—(*Contd.*)

Description	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
20) Photographic and cinematographic	11,04	15,08	16,87	17,99	17,67	26,31	70,65	1,16,62	1,51,60
21) Paper, pulp and stationery	1,08,57	92,10	1,09,12	84,88	64,60	68,40	1,45,45	1,83,39	1,83,61
22) Paints, varnishes and dyes	28,21	12,85	12,69	15,00	12,69	18,06	69,86	1,12,32	99,43
23) Rubber and products thereof	1,02,64	84,50	1,25,18	1,12,49	1,04,73	1,57,38	80,52	1,37,49	1,28,22
24) Vegetables and products thereof	4,69	3,27	5,95	4,14	2,87	2,59	1,10,37	97,61	1,38,74
25) Ginned cotton, jute and hemp	7	1	0	0	0	0	0	0	0
26) Petroleum products, oils, *etc.*	7,61,51	7,67,40	9,13,48	9,70,57	9,87,15	9,06,65	11,27,77	11,18,97	9,08,92
27) Cement	—	—	—	—	1,04	2	—	—	—
28) Transport material and railway articles	1,18,49	1,01,34	1,29,98	1,32,07	1,64,74	1,63,70	3,07,35	5,20,18	6,73,59
29) Iron, steel and manufacture thereof	1,59,98	2,47,41	2,74,74	3,74,86	3,40,92	2,63,85	8,76,57	10,76,11	13,78,67
30) Machinery other than electrical	2,53,35	1,49,43	2,21,71	2,68,38	3,14,12	4,93,30	4,76,04	6,47,29	10,20,05
31) Electrical machinery	71,57	71,52	1,56,27	1,64,88	1,20,96	1,38,98	4,61,71	5,84,06	10,38,30
32) Government account	1,60,23	2,85,57	2,92,62	3,53,68	3,80,51	2,66,87	8,96,85	8,88,95	5,63,72
33) Miscellaneous	6,27,00	15,46,97	9,83,02	11,30,59	11,44,82	17,57,16	8,06,01	5,80,19	6,04,22
Total:	**46,41,17**	**54,63,02**	**53,31,74**	**55,12,73**	**50,86,15**	**54,91,17**	**78,25,67**	**91,30,65**	**105,19,51**

Source: Appendix Table A-5 *puls* A-7.

TABLE A-4

COLLECTION OF EXCISE DUTY—ALL PAKISTAN

Description	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
	(.....*in lac rupees*.....)								
1) Soap, toilets and cosmetics	—	—	—	—	—	43	44	53	55
2) Matches and other explosives	62	83	1,00	1,09	1,19	1,87	1,97	2,01	1,62
3) Salt	2,55	2,46	2,26	1,99	1,85	2,50	1,86	1,59	1,26
4) Sugar and sweetmeats	95	1,47	1,45	1,57	2,24	2,45	2,13	1,79	3,04
5) Medicines and chemical products	—	—	—	—	—	—	—	—	—
6) Silk, yarn and silk textiles	—	—	—	—	—	—	—	—	—
7) Glassware, china, *etc.*	—	—	—	—	—	—	—	—	—
8) Tobacco, cigars and cigarettes	5,95	7,02	7,74	8,62	11,04	10,54	10,64	11,08	13,89
9) Coffee, tea, spice and betelnut	68	60	70	59	96	78	4,17	3,50	2,82
10) All textiles other than silk	3,31	3,61	4,17	5,23	7,35	8,88	9,72	9,76	9,19
11) Spirits, wines, liquors, *etc.*	—	—	—	—	—	—	—	—	—
12) All precious stones and metals	—	—	—	—	—	—	—	—	—
13) Refrigeration and airconditioning equipment	—	—	—	—	—	—	—	—	—
14) Works of art	—	—	—	—	—	—	—	—	—
15) Arms and ammunition	—	—	—	—	—	—	—	—	—
16) Meat, fish and their preparation	—	—	—	—	—	—	—	—	—
17) Furniture and products thereof	—	—	—	—	—	—	—	—	—
18) Leather and products thereof	—	—	—	—	—	—	—	—	—
19) Cars, scooters, buses and parts	—	—	—	—	—	—	—	—	—

(*Contd.*)

TABLE A-4—(*Contd.*)

Description	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
20) Photographic and cinematographic	—	—	—	—	—	—	—	—	—
21) Paper, pulp and stationery	—	—	—	—	—	—	—	—	—
22) Paints, varnishes and dyes	—	—	—	1	17	18	18	21	21
23) Rubber and products thereof	9	9	8	13	14	13	15	15	16
24) Vegetables and products thereof	8	11	17	18	27	45	56	75	98
25) Ginned cotton, jute and hemp	—	—	—	—	—	—	—	—	—
26) Petroleum products, oils, *etc.*	2,70	2,73	2,97	3,71	4,76	4,47	5,11	5,56	10,54
27) Cement	—	—	—	—	—	—	1,63	1,91	2,14
28) Transport material and railway articles	—	—	—	—	—	—	—	—	—
29) Iron, steel and manufacture thereof	—	—	—	—	—	—	71	95	73
30) Machinery other than electrical	—	—	—	—	—	—	—	—	—
31) Electrical machinery	—	—	—	—	—	—	—	—	—
32) Government account	—	—	—	—	—	—	—	—	—
33) Miscellaneous	9	5	17	62	78	50	53	37	38
Total:	**17,02**	**18,97**	**20,71**	**23,75**	**30,75**	**33,18**	**39,80**	**40,16**	**47,51**

Source: Central Board of Revenue, Statistical Office, unpublished data reclassified at PIDE.

TABLE A-5

COLLECTION OF IMPORT DUTY—ALL PAKISTAN

Description	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
	(.....*in thousand rupees*.....)								
1) Soap, toilets and cosmetics	—	—	—	—	—	—	42,06	45,12	67,04
2) Matches and other explosives	13,05	1	3	2	1	—	42,85	84	2,01
3) Salt	—	—	—	—	—	—	—	—	—
4) Sugar and sweetmeats	5,70,33	5,02,10	5,06,66	6,66,23	1,70,62	7	98,92	5,62,65	6,86,89
5) Medicines and chemical products	1,39	96	1,58	1,53	1,33	2,51	2,13,96	2,61,23	2,12,29
6) Silk, yarn and silk textiles	2,48,78	2,68,45	4,16,28	2,83,65	3,87,51	4,02,32	46,65	9,91	8,67
7) Glassware, china, *etc.*	—	—	—	—	—	—	1,82,06	1,44,64	1,79,78
8) Tobacco, cigars and cigarettes	2,11,48	1,79,75	2,12,72	1,66,07	1,15,33	1,11,80	1,05,11	1,41,88	1,28,19
9) Coffee, tea, spice and betelnut	26,70	35,16	26,22	25,67	13,74	9,42	23,64	15,93	21,28
10) All textiles other than silk	5,69,14	4,95,45	2,61,18	1,30,55	75,66	75,55	4,59,24	5,62,42	6,56,76
11) Spirits, wines, liquors, *etc.*	59,65	59,67	66,55	68,43	61,71	73,36	76,19	99,37	90,45
12) All precious stones and metals	68	79	47	77	55	35	25,91	30,04	37,72
13) Refrigeration and airconditioning equipment	—	—	—	—	—	—	—	—	—
14) Works of art	—	—	—	—	—	—	—	—	—
15) Arms and ammunition	—	—	—	—	—	—	12,24	10,14	19,25
16) Meat, fish and their preparation	—	—	—	—	—	—	1,34	1,91	4,58
17) Furniture and products thereof	—	—	—	—	—	—	—	—	—
18) Leather and products thereof	44	39	71	1,30	82	5	7,86	11,33	7,70
19) Cars, scooters, buses and parts	1,58,19	1,50,80	2,09,03	2,13,18	2,90,27	2,00,16	5,53,66	6,43,47	7,98,94

(*Contd.*)

TABLE A-5—(*Contd.*)

Description	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
20) Photographic and cinematographic	4,10	4,83	5,40	5,87	5,47	5,86	67,45	94,16	1,11,82
21) Paper, pulp and stationery	86,69	75,18	87,51	69,18	52,69	53,28	1,08,01	1,41,90	1,46,58
22) Paints, varnishes and dyes	28,21	12,85	12,69	15,00	12,69	18,06	69,86	1,12,32	99,43
23) Rubber and products thereof	74,64	57,31	82,62	74,10	64,27	86,98	78,81	1,00,33	1,24,75
24) Vegetables and products thereof	—	—	—	—	—	—	1,00,69	94,73	1,37,02
25) Ginned cotton, jute and hemp	—	—	—	—	—	—	—	—	—
26) Petroleum products, oils, *etc.*	6,58,50	6,54,04	7,55,72	8,39,32	8,56,62	7,78,86	9,67,41	9,96,23	7,65,84
27) Cement	—	—	—	—	1,04	2	—	—	—
28) Transport material and railway articles	15,99	17,12	28,05	39,25	38,90	53,13	1,27,78	2,24,18	2,69,65
29) Iron, steel and manufacture thereof	85,23	1,25,43	1,34,63	1,96,01	1,82,36	1,14,42	6,12,09	7,52,66	9,16,48
30) Machinery other than electrical	2,53,35	1,49,43	2,21,71	2,68,38	3,14,12	4,93,30	4,76,04	6,47,29	10,20,05
31) Electrical machinery	14,01	9,42	21,55	31,56	30,76	32,50	3,05,10	3,84,34	6,11,39
32) Government account	—	—	—	—	—	—	—	—	—
33) Miscellaneous	5,88,28	4,87,40	9,03,10	10,60,04	10,79,13	16,31,20	7,30,50	5,46,87	4,89,86
Total:	**36,68,83**	**42,86,54**	**39,54,41**	**41,56,11**	**37,55,00**	**41,43,20**	**54,92,98**	**66,35,89**	**76,14,42**

Source: Central Board of Revenue, Statistical Office, unpublished data reclassified at PIDE.

TABLE A-6

COLLECTION OF SALES TAX ON DOMESTIC GOODS—ALL PAKISTAN

Description	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
	(.....*in thousand rupees*.....)								
1) Soap, toilets and cosmetics	14,71	21,64	17,43	31,48	41,80	97,15	77,34	86,88	88,50
2) Matches and other explosives	—	—	—	—	—	—	—	—	—
3) Salt	—	—	—	—	—	—	—	—	—
4) Sugar and sweetmeats	4,46	4,46	5,79	4,67	6,38	6,03	3,60	3,18	2,35
5) Medicines and chemical products	15,57	32,95	17,23	19,28	33,86	33,00	43,72	56,63	78,77
6) Silk, yarn and silk textiles	—	—	—	—	—	—	—	—	—
7) Glassware, china, *etc.*	2,47	1,99	2,98	2,28	4,07	6,05	3,96	1,98	3,23
8) Tobacco, cigarettes and cigars	—	—	—	—	—	—	—	—	—
9) Coffee, tea, spice and betelnut	—	—	—	—	—	—	—	—	—
10) All textiles other than silk	5,08,53	5,72,71	6,41,11	7,55,87	10,23,86	10,49,44	13,36,22	12,82,71	11,72,67
11) Spirits, wines, liquors, *etc.*	31,98	35,30	39,07	29,82	32,07	31,52	36,09	44,26	50,59
12) All precious stones and metals	1,82	1,91	1,88	2,01	3,73	97	46	33	80
13) Refrigeration and airconditioning equipment	—	—	—	—	—	—	—	—	—
14) Works of art	—	—	—	—	—	—	—	—	—
15) Arms and ammunition	—	—	—	—	—	—	—	—	—
16) Meat, fish and their preparations	—	—	—	—	—	—	—	—	—
17) Furniture and products thereof	3,27	3,97	5,22	4,29	12,27	10,58	8,62	10,62	11,06
18) Leather and products thereof	12,60	6,70	15,59	17,43	31,55	31,61	39,57	39,47	40,75
19) Cars, scooters, buses and parts	13	8	1	4	3,22	11,21	12,66	12,74	13,82

(*Contd.*)

TABLE A-6—(*Contd.*)

Description	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
20) Photographic and cinematographic	—	—	—	—	—	—	—	—	—
21) Paper, pulp and stationery	12,77	18,40	26,03	35,68	31,87	33,41	56,98	70,79	1,34,11
22) Paints, varnishes and dyes	4,07	6,35	7,48	9,92	20,73	23,65	26,20	29,13	30,24
23) Rubber and products thereof	5,63	4,61	5,81	7,82	11,10	10,27	24,72	10,94	8,84
24) Vegetables and products thereof	58,43	50,23	81,74	1,00,89	1,66,00	1,71,82	1,75,63	2,14,90	2,58,39
25) Ginned cotton, jute and hemp	1,39,00	1,20,60	1,43,94	1,25,06	1,45,34	1,55,74	1,49,88	1,36,92	1,50,65
26) Petroleum products, oils, *etc.*	—	—	—	—	—	—	—	—	—
27) Cement	45,24	37,00	49,34	65,04	1,09,97	67,31	1,51,91	1,68,23	1,91,83
28) Transport materials and railway articles	—	—	—	—	—	—	—	—	—
29) Iron, steel and manufacture thereof	11,70	15,22	34,41	19,08	32,70	24,22	53,39	49,64	46,30
30) Machinery other than electrical	—	—	—	—	—	—	—	—	—
31) Electrical machinery	12,03	14,11	20,79	42,44	64,97	42,41	56,45	67,39	99,26
32) Government account	—	—	—	—	—	—	—	—	—
33) Miscellaneous	47,81	44,62	58,49	83,79	1,24,19	1,47,56	1,64,53	1,75,84	1,93,65
Total:	**9,32,22**	**9,92,85**	**11,74,34**	**13,56,89**	**19,19,67**	**19,53,95**	**24,21,93**	**24,62,58**	**25,75,81**

Source: Central Board of Revenue, Statistical Office, unpublished data reclassified at PIDE.

TABLE A-7

COLLECTION OF SALES TAX ON IMPORTS—ALL PAKISTAN

Description	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
	(.....*in thousand rupees*.....)								
1) Soap, toilets and cosmetics	739	1,148	805	798	541	954	2,036	703	1,022
2) Matches and other explosives	—	—	—	—	—	—	—	—	—
3) Salt	—	—	—	—	—	—	—	—	—
4) Sugar and sweetmeats	—	—	—	—	—	—	—	—	—
5) Medicines and chemical products	4,883	4,215	5,359	7,916	5,406	7,383	10,241	10,376	12,046
6) Silk, yarn and silk textiles	520	264	865	161	102	471	495	327	279
7) Glassware, china, *etc.*	1,258	1,770	2,393	2,443	3,448	3,886	6,610	4,586	10,135
8) Tobacco, cigars and cigarettes	—	—	—	—	—	—	—	—	—
9) Coffee, tea, spice and betelnut	—	—	—	—	—	—	—	—	—
10) All textiles other than silk	21,340	21,081	17,748	11,779	11,663	9,058	9,870	14,516	13,544
11) Spirits, wines, liquors, *etc.*	1,601	2,518	2,516	2,274	2,216	2,865	2,379	2,674	3,926
12) All precious stones and metals	128	270	164	103	86	347	674	969	654
13) Refrigeration and airconditioning equipment	156	331	1,121	778	759	1,072	1,427	965	825
14) Works of art	1	0	5	1	—	—	—	1	15
15) Arms and ammunition	133	170	270	258	223	323	325	919	508
16) Meat, fish and their preparation	5,037	5,214	5,396	4,106	4,554	6,095	9,611	9,916	13,819
17) Furniture and products thereof	1,547	2,101	1,630	1,725	2,045	2,486	3,660	523	5,260
18) Leather and products thereof	56	122	596	148	135	291	7,355	6,234	8,856
19) Cars, scooters, buses and parts	—	—	—	—	—	—	—	—	—

(*Contd.*)

TABLE A-7—(*Contd.*)

Description	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
20) Photographic and cinematographic	694	1,025	1,147	1,212	1,220	2,045	320	2,196	3,978
21) Paper, pulp and stationery	2,188	1,692	2,161	1,570	1,191	1,512	3,744	4,149	3,703
22) Paints, varnishes and dyes	—	—	—	—	—	—	—	—	—
23) Rubber and products thereof	2,800	2,719	4,256	3,839	4,046	7,040	171	3,716	347
24) Vegetables and products thereof	469	327	595	414	287	259	968	288	172
25) Ginned cotton, jute and hemp	7	1	0	0	0	0	0	0	0
26) Petroleum products, oils, *etc.*	10,301	11,336	15,776	13,125	13,113	12,779	16,036	12,274	14,308
27) Cement	—	—	—	—	—	—	—	—	—
28) Transport material and railway articles	10,250	8,422	10,193	9,282	12,584	11,057	17,957	29,600	40,394
29) Iron, steel and manufacture thereof	7,475	12,198	14,010	17,385	15,856	14,943	26,448	32,345	46,219
30) Machinery other than electrical	—	—	—	—	—	—	—	—	—
31) Electrical machinery	5,756	6,210	13,472	13,332	9,020	10,648	15,661	19,972	42,691
32) Government account	16,023	28,557	29,262	35,368	38,051	26,687	89,685	88,895	56,372
33) Miscellaneous	3,872	5,957	7,993	7,055	6,569	12,596	7,596	3,332	11,436
Total:	**97,234**	**117,648**	**137,733**	**135,662**	**133,115**	**134,797**	**233,269**	**249,476**	**290,509**

Source: Central Board of Revenue, Statistical Office,unpublished data reclassified at PIDE.

TABLE A-8

TAXES ON EXPORTS—ALL PAKISTAN

	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
	(*in thousand rupees*)								
Sales Tax on Exports (SLX)									
1) Fresh fish	1,792	1,949	1,672	1,188	1,406	2,069	2,919	4,420	7,220
2) Poultry and eggs	813	850	1,036	459	8	14	191	183	360
Total:	**2,605**	**2,799**	**2,708**	**1,647**	**1,413**	**2,083**	**3,106**	**4,602**	**7,581**
Export Duty (X)									
1) Raw Jute	66,002	95,588	77,164	82,654	81,786	86,421	53,743	70,827	73,440
2) Raw cotton	54,828	106,416	80,234	47,866	54,278	26,951	19,913	18,100	27,505
3) Skins and hides	1,764	121	1	13	—	—	—	—	—
4) Rice	558	117	—	—	—	—	—	—	—
5) Tea	—	1,705	5,759	1,296	2,463	12,650	—	—	—
6) Fish	2,722	2,550	2,174	1,476	1,435	1,651	1,993	2,486	3,958
7) Miscellaneous	70	58	112	2	88	102	—	—	—
Total:	**125,946**	**206,560**	**165,442**	**133,306**	**140,051**	**127,774**	**75,649**	**91,413**	**104,904**
SLX+X	128,551	209,359	168,150	134,953	141,464	129,857	78,755	96,015	112,485

Source: Central Board of Revenue, Statistical Office.

The Rate Structure of Indirect Taxes In Pakistan

Ghulam Mohammad Radhu

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The Rate Structure of Indirect **Taxes in Pakistan**

Ghulam Mohammad Radhu

INTRODUCTION

The purpose of this paper is to examine the rate structure of indirect taxes in Pakistan with particular emphasis on the incentive aspects of the tax structure. The rate structure of indirect taxes, however, is only one of the many factors that influence the relative prices and relative profitabilities of industries. Direct controls, like the import-licensing system, exchange-rate policy, the export-bonus scheme, *etc.*, may in fact have greater impact on relative prices and on the pattern of investment than indirect tax rates. However, this paper examines the differential incentives provided by the rate structure of indirect taxes alone, assuming that the market is allowed to operate freely and that rate structure is the major factor influencing relative prices of industrial goods.

The traditional objectives of taxation policy have been confined largely to diverting sufficient resources to the government sector to match its expenditures. However, recent developments in fiscal thought have come to assign a more positive role to taxation policy in economic development, and the impact of the tax structure on the rate and direction of a saving and investment is widely recognized. In Pakistan and other underdeveloped countries, in view of the inadequate coverage and administrative complexities of direct taxes, indirect taxes assume a particular significance.

The usual case for indirect taxes is that: *i*) they are relatively easy to administer; *ii*) they raise the costs of consumption relative to saving, hence saving is encouraged at the expense of consumption; and *iii*) since there can be different rates of indirect taxes for different commodities and different rates for imports, locally produced goods and exports, the indirect tax system is an instrument for creating differential incentives to particular industries in Pakistan and for encouraging export and import substitution. The range of indirect taxes covered in this paper includes sales, excise, import and export taxes, all levied by the central government.

There are three major sections in this paper. In Section II, we present a general description of the basic law and the rate structure of each tax separately. Some administrative and operational procedures are also discussed. Section III analyses the rates of indirect taxes according to two separate classifications. First, we examine the rate structure by industrial groups classified in a manner similar to that being used by the National Statistical Council's working group on input-output statistics and by other studies at the Institute. The second classification is by type of commodity, using Planning Commission-ECAFE definitions to divide commodities into various categories. We discuss in Section III the differential incentives given to particular industries by the impact of the rate structure on relative prices. The final section examines the rate structure to see the extent to which it is consistent with the broader objectives of fiscal policy and with the stated aims of the government to promote certain types of industries. Some tentative suggestions are made in the final section for modifying the rate structure.

II. THE RATE STRUCTURE OF CENTRAL GOVERNMENT INDIRECT TAXES

Sales Tax

The case for a general sales tax is that it is an elastic and dependable source of revenue. It is well suited for conditions in Pakistan and other developing countries, for it is able to reach those parts of population with incomes too low to be covered by income tax but who have nevertheless to be taxed for the purpose of raising tax revenue and restraining consumption expenditure. The virtue of the sales tax, it is usually argued, is that it widens the tax base, restrains consumption and falls on spending rather than on income and saving.

The power to impose a sales tax was granted to the provinces under the Government of India Act, 1935. It was first introduced in the undivided provinces of the Punjab and Bengal. The Punjab province adopted

the multiple-point tax imposing a sales tax of 0.25 per cent at every stage of sale. Bengal chose to levy a single-point tax of three pies in a rupee, or 1.56 per cent, at the final stage of sale to the consumer or the unregistered dealer. In 1948, the tax was transferred from the provinces to the Centre by an amendment to the Government of India Act, 1935. Since then, it has been administered by the Centre, but the provinces are entitled to a share in the receipts.

The Pakistan General Sales Tax Act of 1948 originally imposed a multiple-point tax of 3.125 per cent (two pice per rupee) on every commercial transaction, with an exemption limit of five thousand rupees. All dealers with an annual turnover exceeding five thousand rupees were subject to the tax. But in 1950, a sales-tax committee was appointed and on the recommendations of the committee the multiple-point tax was replaced by a single-point tax which is levied as follows:

i) in the case of goods imported into Pakistan at the time of clearance through the customs, payable by the importer;

ii) in the case of goods produced, processed or manufactured in Pakistan at the stage of sale by the producers or manufacturers, payable by the producers or manufacturers;

iii) on goods sold by the producers or manufacturers to licensed wholesalers, payable by the licensed wholesalers.

In the case of imported goods, the tax is payable on the duty-paid value of the goods[1]. In the case of goods produced or manufactured in the country, the tax is payable on the sale price[2].

The standard rate of tax was 10 per cent from 1951 to 1960. It was raised to 12.5 per cent in July 1960, and in 1963 it was further raised to 15 per cent. Certain essential goods, notably most food articles, drugs and medicines, certain exciseable items like tea, matches and tobacco, goods for educational purposes such as newspapers and periodicals, and all capital goods are exempt from sales tax. Certain goods are taxed at reduced rates ranging from 3-1/8 per cent to 10 per cent. Some luxury goods like articles of fur and skin, liquors, and silken goods, *etc.*, are charged at higher rates from 15 to 20 per cent. The original exemption limit under the Sales Tax Act of 1948 was an annual turnover of 5,000 rupees. In 1951, when the tax was changed from multiple-point to single-point, cottage industry was allowed

1 Duty-paid value is the *c.i.f.* price of the goods *plus* the amount of customs duty levied thereon.

2 'Sale price' means, with respect to exciseable goods, the wholesale cash price charged by the manufacturer *plus* the amount of excise duty. In other cases, 'sale price' refers to the price before any tax is added, but includes provincial excise, if any.

an exemption upto 25,000 rupees. The exemption limit was raised to 36,000 rupees in 1952 and to 60,000 rupees in 1954. It was, however, brought down to 36,000 rupees in 1959. Cottage industry[3] was exempted from tax irrespective of the amount of turnover.

Excise Duties

In most developing countries, customs constitute the primary form of indirect tax. However, as domestic production of goods previously reached by customs increases, some use of excises becomes necessary in order to replace the customs revenue. The case for excise duties in Pakistan, as pointed out by the Taxation Enquiry Committee, is that *i*) those domestic industries which have been developed under the protective wall of the tariff and quota system must be taxed in order to replace the customs revenue, *ii*) excise duties will enable the government to have a due share in the development of protected industries, and *iii*) excise duties will put a restraint on the growth of consumption [13, p. 175].

At present, there are twenty-nine exciseable goods. In 1948, there were only fifteen items on which excises were levied. But as domestic industries developed, new items appeared on the list. Thus, in 1957/58, for the first time, petroleum products and jute manufactures were subjected to excise duty. The following year, four more items were added. These were woollen textiles, electric fans, tanned leather, and paints and varnishes. In 1959/60, an excise was imposed on soap. Excises were levied on electric bulbs, polish and cream, cosmetic and toilet preparations in 1963.

The excise duties are specific, except on a few items, and are levied at the production point. The rates of excise are lower than the corresponding customs duties, as would be expected. The differentials are maintained for protection of domestic industry. In 1962/63, for example, the following differential rates applied.

	Excise duty	Import duty
Sugar (*per cwt.*)	7 rupees	32 rupees
Tyres (*ad valorem*)	10 per cent	30 per cent
Cement (*ad valorem*)	15 ,, ,,	50 ,, ,,
Paints and varnishes (*ad valorem*)	10 ,, ,,	35 ,, ,,

[3]Butt's book gives the following definitions of 'cottage industry' for the purpose of exemption: (*a*) "That it is basically an enterprise in which the owner combines in himself the function of the investor and the labourer; (*b*) that it is (*i*) wholly dependent on manual or animal labour and the number of workers employed therein on a single-shift basis does not exceed ten at any time during the year or (*ii*) uses mechanical or electric power (such use not being its dominant feature) and the number of workers employed therein on a single-shift basis does not exceed five at any time during the year; (*c*) that the capital employed therein does not exceed ten thousand rupees at any time during the year" [1, Pp. 148-150].

The exemption limit for cloth production was twenty powerlooms, that is, factories operating below this limit were exempted from excise. In 1959, this limit was lowered to five powerlooms. For some industries there is no exemption limit but the rates of tax vary with the size of daily output or with the value of the commodity. For instance, in the match-producing industry, there are separate rates for factories whose daily output is less than or greater than one hundred gross of boxes. The excise on manufactured tobacco varies with the value of the commodity. Thus, on cigarettes whose value per thousand does not exceed ten rupees, the excise is one rupee per thousand, while on cigarettes whose value exceeds twenty rupees but does not exceed twenty-six rupees, the rate of duty is twenty-two rupees per thousand.

Import Duties

In Pakistan where a high percentage of all manufactured goods used in the country is imported, import duties constitute the main source of revenue. Import duties are levied for various purposes. The main consideration is revenue, but protection also plays a very important part. Other objectives of such levies are: easing balance-of-payments difficulties, checking consumption and freeing foreign exchange for items of major importance for economic growth. Thus, in the rate structure of import duties in Pakistan, several principles play a part along with a considerable element of chance and tradition. Goods regarded as luxuries bear the heaviest duties; on such items rates range from 100 per cent to 300 per cent. Articles such as liquor, jewellery, cigarettes, musical instruments, silken cloth, perfumes and cosmetics, *etc.*, carry very heavy duties. Goods of widespread use and semi-luxuries are charged moderate rates, primarily as a source of revenue. Very low rates or complete exemption is given to goods regarded as *i*) basic necessities, *ii*) important to the general welfare (such as educational materials and medicines), *iii*) capital goods, and *iv*) raw materials used in agriculture and industry.

The Pakistan tariff schedule is a six-column tariff with preferential rates for the United Kingdom and other Commonwealth countries. The first column presents the statutory rate and the second column presents the general concessional rates for all countries. For certain goods, there are concessional rates under the General Agreement on Tariff and Trade (GATT). Finally, there are preferential rates for certain goods from Ceylon, or a British Colony, and from the United Kingdom and India. The schedule was relatively simple until 1959 with rates being listed only by major categories. However, after 1959 the breakdown became more detailed and complicated, and the number of items was increased from 549 to 1,372 with many subcategories.

The duties are *ad valorem* with a few exceptions. *Ad valorem* duties are more elastic than specific duties, since revenue from such duties varies proportionately with changes in prices. Import duties tend to be progressive because the more expensive varieties of the same commodity pay a higher duty. The duties are levied on *c.i.f.* prices. With *ad valorem* tariffs, the key to correct payment of duty is accurate valuation of the goods. In Pakistan, valuation of articles liable to *ad valorem* rates of duty is regulated by the provisions of Section 30 of the Sea Customs Act, 1878 which defines the "real value" for purposes of duty as "the wholesale cash price, less trade discount, for which goods of the like kind and quality are sold, or are capable of being sold, at the time and place of importation or exportation, as the case may be, without any abatement or deduction whatever, except of the amount of the duties payable on the importation thereof" [12, p. 23].

Export Duties

The Pakistan export-duty schedule is a two-column schedule showing a statutory rate and a general concession for all countries. At present, four goods are subject to export duty. They are raw cotton, raw jute, fish and cotton seed. In the past, export duties were levied on twelve items, *i.e.*, raw jute, raw cotton, raw wool, tea, hides and skin, bamboo, jute manufactures, rice, cement, fish, and cottonseed. Gradually, duties were withdrawn from all but the remaining four. Duties on bamboo and cement were suspended in 1950 and that on raw wool in 1952. Raw hides and skins and rice were exempted from duty in 1955, and duties on jute manufactures were suspended in 1953.

Export duties are specific except on cottonseed. From the administrative point of view, export duties are more acceptable than import duties in that both the variety and the complexity of goods exported are less than on the import side. However, due to their adverse effect on exports and on the internal prices of exportable goods, they cannot be relied upon as a major source of revenue.

III. DIFFERENTIAL INCENTIVES PROVIDED BY INDIRECT TAXES

There are different rates of duty for exports, imported goods, and locally produced goods for home market. We have presented a separate table for each category. In Table I, we have presented the rates of export duty for the years 1948-63. Average duties on imported goods and locally produced goods have been shown in Tables II and III, respectively. Average duties on imported goods mean import duties *plus* sales taxes. Similarly, average duties on domestically produced goods mean excises *plus* sales taxes. In the case of import duties, averages have been calculated

on the basis of statutory rates or the rates chargeable as a result of general exemption for all countries, whichever applied. Other concessional rates chargeable under GATT or preferential rates for the United Kingdom and other Commonwealth countries have not been taken into consideration. The averages are simple arithmetic means. They have been calculated by adding all the rates of duties in each industry or category divided by the total number of items in that category of the tariff schedule. In some cases where the mode has been found more representative than the mean, the mode has been taken as the "average". We have converted the specific excise duties into *ad valorem* in order to calculate the averages. The method adopted is as follows: from the *Year Books* of the Central Statistical Office, we have taken the annual average wholesale prices for the exciseable goods and the rates of excises have been deducted from the wholesale prices in order to get a rough estimate of the cost prices. Then, we calculated the rates of excises as a percentage of the cost prices.

Export Taxes

Table I presents the rates of export duty for the years 1948-63. It is obvious from the table that export duties have gradually been abolished. By 1963, only five goods were subject to the export tax. In order to give further incentives for exports, most sales taxes on export goods were suspended in 1961. Thus, there is no sales tax on any export goods (domestically produced) other than ginned cotton [1, p. 19].

The present export duties on raw cotton and raw jute act as disincentives to the producers of these commodities. The tax reduces the earnings of the exporters and growers and, thus, has an adverse effect on the volume of exports. The imposition of an export duty on cotton and jute reduces the relative profitability of these commodities, and the production of competing crops like rice and sugarcane becomes more profitable [3]. Thus, diversion of resources takes place from the production of exportable goods towards food crops for domestic consumption. Moreover, to the extent that the export duty keeps domestic prices of raw jute and raw cotton lower than world prices, it is a kind of subsidy to domestic textile industries. As raw cotton and jute are then available at lower prices and in larger quantities to the textile industries, the domestic prices of cotton textile and jute manufactures will be lower. This encourages domestic consumption of cotton and jute textiles, which results in a higher domestic absorption of raw cotton and raw jute.

Import Taxes

Table II shows average rates of duty on imported goods classified into

thirty-two industrial groups for the years 1954/55 to 1962/63. Several facts are at once obvious. First, the highest averaged duties on imported goods are on consumption-goods and the lowest are on capital-goods industries. For instance, in the year 1962/63 the average duty is 153 per cent on cotton, 200 per cent on manufacture of silk and artsilk, 185 per cent on tobacco, 150 per cent on fabricated textiles manufactures, not elsewhere classified (*n.e.c.*). Duties on heavy capital goods, however, are very low. The average duty on nonelectrical machinery is 12.5 per cent, on electrical machinery 22 per cent, 18 per cent on transport vehicles and equipment (except automobiles) and 16.5 per cent on basic-metal industries. These averages, however, hide considerable variation in the rates within an industry. Thus, in the case of tobacco industry, the average duty ranges from 40 per cent on tobacco extracts and essences to 300 per cent on cigarettes. For silk and artsilk, the rates vary from 44 per cent on raw silk to 320 per cent on silk fabrics, for footwear they range from 57 per cent on parts of footwear to 91 per cent on slippers and shoes, and for transport vehicles (except automobiles) zero to 40 per cent. In Table IV, we present the range of duties on imported goods in each industry for the years 1958 and 1962.

Second, there is an upward trend in the rate of duty. Though from 1954 to 1959 the average duties are more or less constant, we find a sudden upward shift after 1959. This rise is mainly the result of the recommendations made by Taxation Enquiry Committee[4]. The Committee proposed enhancement of the rate of import duties on most goods. Thus, the rise in the rate of duty in 1960/61 is partly due to the increase in import duty and partly due to the rise of the standard rate of sales tax from 10 per cent to 12.5 per cent. There are some minor changes in 1962, such as a fall in the average duty on chemicals from 47 per cent to 42 per cent.

Third, the absolute increase in the rates of duty is much more substantial in the case of consumption-goods industries than capital-goods industries. Thus, the average duty for cotton textiles rises from 76 per cent in 1958 to 143 per cent in 1962, an increase of 77 percentage points. Similarly, there is an increase of 88, 75 and 69 percentage points for fabricated textile manufactures, silk and artsilk, and manufactures of textile *n.e.c.*, respectively. As regards capital-goods industries, though the percentage increase is significant and fairly comparable to the rise in consumption-goods industries, the absolute increase is not significant. For instance, average duty on nonelectrical machinery has risen from 5 per cent to 12.5 per cent, more than 100 per cent increase, but the absolute increase is only 7.5 percentage points.

[4]The Taxation Enquiry Committee was appointed by the Central Government in 1957 and submitted its report in 1960.

Another subject of interest is the rate of duty on goods classified by end-use. Table VI shows the average duty on imported goods by types or end-use of commodities. The classification is based on the Planning Commission-ECAFE definitions of consumption goods and for capital goods. We further classify the consumption goods into essentials, semi-luxuries, and luxuries, raw materials into unprocessed and processed, and capital goods into consumer durables and producer durables. These extensions made to the Planning Commission-ECAFE scheme are not based on any standard classification but on the author's judgement.

In this classification, too, we find the same picture. Luxury goods have been taxed most heavily, a relatively lower rate is levied on semi-luxury goods, and a still lower average rate applies to essential goods. Within raw materials, the average rate is distinctly lower for unprocessed raw materials and higher for processed materials, and it is slightly lower for raw materials mainly used in capital-goods industries than it is for raw materials used in consumption-goods industries. Machinery and other capital equipment bear the lowest rates, and household durables are heavily taxed among the capital goods. The rise in the rates of duty over time is most remarkable in luxury and semi-luxury goods. In other cases, the percentage-point increase is not as significant.

Taxes on Domestic Goods

Table III shows the rate of duty on domestically produced goods, and comparison of Tables II and III shows the extent of inducement given for import substitution by the rate structure of indirect taxes. For all industries, the duties are considerably lower if produced domestically than if imported. The average duties on domestically produced goods remained below 20 per cent except on three or four industries. In Table II, we do not find any uniform trend in the rate structure. Some industries like sugar, edible fats and oils, and food manufacturing, show a slight downward trend, while the matches, chemicals, and cement industries show an upward trend. In some cases, the rates are more or less constant. The reasons for the variation are: *i*) excise duties are specific, so in spite of gradual increases in tax rates, the proportional burden of taxes remained constant or even declined as the general level of prices rose; and *ii*) exemptions from the sales tax were given to various commodities from time to time. For example, edible fats and oils (except vegetable ghee) were exempted from sales tax in 1960, and foods manufactured or produced by residential hotels and bakeries were also given complete exemption in 1960.

Comparison of Domestic and Import Taxes

In Table V, we present a comparison of Tables II and III. Both the ratios of and the absolute differences between Tables II and III are given.

Several acts clearly emerge from the combined table. First, the absolute differences in the rates of duty between imported goods and locally produced goods are highest for the textiles, tobacco and leather industries, and are lowest for heavy capital-goods industries like electrical and nonelectrical machinery, and transport vehicles and equipment (except automobiles). Consumers' durables and other capital goods, however, do have significant absolute differences.

Second, until 1959 or during the first rush of industrialization, most of the industries, except machineries and transport goods, exhibit more or less the same absolute differences, but after 1959 the consumption-goods industries show considerably higher absolute differences. The reason can be explained by the remarkable increase which took place in the rates of duty on imported consumption goods after 1960.

Third, the ratios of rates of duties on imported and domestic goods do not show much difference between industries, and the capital-goods industries have ratios as high as consumption-goods industries. Thus, the proportional differences between rates of duty on imported goods and domestically produced goods are almost the same for all industries, though the absolute differences vary considerably.

These absolute differences and ratios reflect the degree of protection received by the domestic industries from the rate structure of indirect taxes. In terms of cost structure, they indicate the extent to which domestic cost of production can be higher than foreign cost of production. If the ratios and absolute differences in tax rates are quite large, then inefficient and high-cost domestic firms can still compete easily with efficient foreign firms in the home market. On the other hand, assuming domestic and foreign costs approximately equal, these ratios and absolute differences measure the extent of profit margin provided to domestic manufacturers by the rate of duty. The higher the ratios and absolute differences, the larger will be the profit margins or the more inefficient can be the domestic producers and still compete with imports.

The Rate Structure and Industrialization Policies

We have now before us a broad picture of the rate structure of indirect taxes in Pakistan. The rate structure presumably has an impact on the allocation of resources and pattern of investment. But the actual allocation of resources depends on many factors, such as the import-licensing system, exchange-rate policy, the export-bonus scheme, *etc.*, all of which affect relative prices and relative profitabilities. As a matter of fact, direct controls may have far greater impact on the relative prices of goods and

relative profitability of industries than the rate structure of indirect taxes. Suppose, for example, that the imports of sewing machines are restricted "tightly". If the demand for sewing machines considerably exceeds the limited supply at *c.i.f.* prices *plus* duties and "normal" markups, then the market prices of these machines will be much higher than import prices. No matter how low the duties on imported sewing machines, their internal prices will be much higher than "normal prices". As a result, domestic production of these goods may become very profitable, even though little "protection" is given by the tariff structure. On the other hand, if the rates of duties on imported sewing machines are increased, but licences are issued liberally for the import of these goods, then the difference between internal prices and *c.i.f.* prices will be roughly equal to the amount of duty. Domestic production may not be as profitable in such a case.

Similarly, the exchange-rate policy and export-bonus scheme tend to distort the effect of rate structure on the relative profitability of industries. In short, when most major sectors of the economy are regulated by direct controls, changes in the rate structure may have negligible effects on the relative profitability of the industries[5]. However, as mentioned earlier in this paper, we deal with the differential incentive provided by the rate structure of indirect taxes alone, assuming that the market is allowed to operate freely and that rate structure is the major policy factor influencing relative profitability of different industries.

The high rates of duty on imported consumption goods make their local production very profitable. As the market is protected by high walls of tariffs, the competitive position of domestic industries improves and they expand under the shelter of protection. Thus, the greater protection given to finished consumption goods rather than to intermediate goods or capital equipment encourages investment in the former industries. If the highest rates of duty are on "unessential" goods, these are the goods whose local production is most profitable. The imposition of heavy duties on luxury and semi-luxury goods is justified on the grounds of principle of equity and ability to pay, and the purpose is to discourage their import and consumption and to save foreign exchange for the import of more "essential" goods. But unless measures are taken to discourage their domestic production by heavy excise or sales taxes, this kind of rate structure only leads to import substitution in favour of "unessential" consumption goods[6]. The low rates of duty on imported capital goods, on the other hand, provide no incentive to produce these goods locally as the imported capital goods are relatively cheap and of good quality. Though capital goods bear no tax if produced locally, the import duties do not appear to be high enough to make domes-

[5]For a somewhat more extended discussion of this point, *see* [3].

[6]This point was first raised in recent years by Ragnar Nurkse [5, p. 116].

tic production profitable. No doubt, a substantial proportional increase in the rates of import duty on capital goods took place, but the rates are still quite low in comparison to that on consumption goods. Low import duties on capital goods are favoured on the ground that the prices of capital goods must be kept low in order to provide incentives for investment. But in Pakistan this argument is not likely to be true, as the demand for imported capital goods seems to exceed the supply considerably at *c.i.f.* prices *plus* import duties[7]. Actually, the demand for capital goods is a derived demand, as they are demanded because the goods they produce have great demand in the country. When the imports of consumption goods are discouraged by heavy duties, their domestic production becomes very profitable and the demand for capital goods used in these industries rises sharply. The policy of maintaining low rates of duty on capital goods not only discourages domestic production of such goods but also may tend to generate the profits of the industries receiving the imported capital goods. Moreover, it induces the local producers to adopt capital-intensive techniques of production. Similarly, there seems to be little justification for maintaining low rates of duty on raw materials for consumption goods, since it induces the local producers of consumption goods to use imported raw materials[8].

Thus, the rate structure of import duties, excises, and the sales tax gives a set of incentives that discourages import substitution in capital-goods industries. This kind of import-substitution strategy, as suggested in [14], leads to "consumption liberalization". High tariffs (and other restrictions) on the imports of consumption goods not only curb imports but also constrain consumption. However, as domestic production of consumption goods increases, these constraints no longer remain, and frequently domestic absorption of these goods exceeds what would have been absorbed if these consumption goods had continued to be imported. Therefore, a sort of automatic decontrol of consumption takes place which retards the rate of saving and, perhaps, the rate of growth.

A second aspect of such an import-substitution strategy is that if specialization for the home market is not possible due to markets of limited extent, firms of uneconomic size may develop, in which case most of the value added in manufacturing industries becomes nonprofit income, due to inefficiency and high cost of production of those firms. Due to these factors, this kind of strategy fails to develop a self-generating mechanism of industrial growth. Unless import substitution is extended to intermediate- and capital-goods industries, or unless exports are promoted, the pace of

[7]Mati Lal Pal, a Research Economist at the Institute, in a study of the determinants of rupee prices of imported goods comes out with preliminary investigations quite consistent with this hypothesis. The result of his study appeared in the Winter-1964 issue of *The Pakistan Development Review*.

[8]For additional elaboration of this argument, *see* [2].

industrial development slows down as the domestic-market limits are reached. Development of capital-goods industries is necessary to meet the growing requirements of capital goods as well as to reduce pressure for greater domestic absorption of consumption goods [14].

It should be noted, however, that the only industries that are seriously disadvantaged by the structure of indirect-tax rates are the heavy capital-goods industries. Even such industries as the basic-metal industries, chemical, non-metallic mineral products, *etc.*, had duty protection that was nearly comparable to most of the light consumption-goods industries in the period upto 1959/60. It is only since 1959/60 that the duty structure has substantially favoured the luxury consumption-goods industries over those producing intermediate goods. These facts are obvious from Table IV. Thus, it seems that considerably more work must be done to test Power's hypothesis on the differential rates of growth encouraged by the duty structure. Only the case of pure capital goods seems to be consistent with his generalization about the duty structure.

IV. SUMMARY AND CONCLUSIONS

The Government of Pakistan is attaching considerable importance to the setting up of industries in Pakistan as a means of achieving self-sustaining growth. The main emphasis is on import substitution and expansion of exports of manufactured goods.

The rate structure of indirect taxes currently gives a set of incentives that encourages import substitution in consumption-goods industries. The high rates of duty on imported consumption goods make their domestic production extremely profitable and the low rates of duty on imported capital goods and materials discourage their domestic production. The low rates of duty on raw materials induce the local producers to use imported raw materials.

This kind of import-substitution strategy has several disadvantages. The replacement of imported consumption goods by domestic production leads to an automatic decontrol of consumption. With the development of domestic consumption-goods industries the domestic absorption of consumption goods increases which hampers the rate of growth of saving. Due to low income elasticity of demand for such goods and keen competition from other developing countries (because most of the developing countries choose such industries for import substitution) the export market for such goods is limited. So, the pace of industrial development tends to decline as the domestic-market limits are reached.

It seems, therefore, necessary to extend the import substitution to intermediate- and capital-goods industries also in order to *i*) reduce the domestic absorption of consumption goods, *ii*) meet the growing requirements of capital goods at home, and *iii*) provide investment opportunities for the incomes generated in consumption-goods industries.

The existing complicated rate structure of import duties and excises needs to be simplified. The Planning Commission has classified imports into four major categories, *i.e.*, consumption goods, capital goods, raw material for consumption goods and raw material for capital goods. We have further classified consumption goods into essential semi-luxuries, and luxuries, divided raw materials into processed and unprocessed, and capital goods into consumer durables and producer goods. If a single rate of duty is fixed for each category, the total number of rates will be reduced to nine. This simplification will not unduly distort the rate structure but will instead improve it, as the commodities have been classified into appropriate homogeneous categories. Thus, the present multiplicity of rates can be reduced to nine rates in the first instance.

At present, excises are mostly specific and in some cases very complicated. If the specific rates are converted into *ad valorem* rates, as has been done for paints and varnishes and cotton and woollen fabrics, it will simplify the rate structure as well as make the excise an elastic source of revenue.

There is also a need to modify the present rate structure of indirect taxes in order to make it favourable for the establishment of intermediate- and capital-goods industries and to encourage the use of domestic raw materials. One possible way to do this is to raise the rates of import duty on capital goods and raw materials. Certain essential raw materials for capital-goods industries which are not available at home may continue to be taxed lightly. Such a change would make the domestic production of capital goods more profitable and the use of domestic raw materials would be encouraged. On the other hand, heavy excises and sales taxes may be imposed on consumption goods in order to discourage their domestic consumption, and unless they are exported, their domestic production as well.

However, in a country where foreign exchange and other key sectors of the economy are regulated by direct controls, the rate structure may have little effect on the relative profitability of the industries. Therefore, what is required is to redesign not only the rate structure but also import-licensing system, exchange-rate policy and export-bonus schemes, *etc.*, in such a way that they give proper incentives consistent with the broader economic goals of the country. But spelling out the "proper" mix of all these policies is beyond the scope of the present paper.

REFERENCES

1. Butt, Mohammad Amin and Saeed Mohammad, *The Law of Sales Tax.* (Lahore: Qaumi Kutub Khana, 1964).

2. Lewis, Stephen R. Jr., "Aspects of Fiscal Policy and Resource Mobilization in Pakistan", *Pakistan Development Review,* Vol. IV, No. 2, Summer 1964.

3. Lewis, Stephen R. Jr. and S. K. Qureshi, "The Structure of Revenue from Indirect Taxes in Pakistan", *Pakistan Developmen Review,* Vol. IV, No. 3, Autumn 1964.

4. Mohammad, Ghulam, "Some Physical and Economic Determinants of Cotton Production in West Pakistan", *Pakistan Development Review,* Vol. III, No. 4, Winter 1963.

5. Nurkse, Ragnar, *Problems in Capital Formation in Underdeveloped Countries.* (New York: Oxford University Press).

6. Pakistan, Central Board of Revenue, *Annual Customs and Central Excise Administration Report,* 1954/55, 1955/56, 1956/57. (Karachi: Manager of Publications).

7. Pakistan, Central Board of Revenue, *Central Excise Manual.* (Karachi: Manager of Publications, 1964).

8. Pakistan, Central Board of Revenue, *Hand Book on Central Excises.* (Karachi: Manager of Publications, 1956).

9. Pakistan, Central Board of Revenue, *Report of the Sales Tax Committee.* (Karachi: Manager of Publications, 1962).

10. Pakistan, Department of Trade Promotion and Commercial Intelligence, *Pakistan Customs Tariff.* (Karachi: Manager of Publications, fourth issue, 1958).

11. Pakistan, Ministry of Commerce, *Pakistan Customs Tariff.* (Karachi: Manager of Publications, July 1960).

12. Pakistan, Ministry of Law, *The Sea Customs Act,* 1878. *(VIII of* 1878). (Karachi: Manager of Publications, June 1957).

13. Pakistan, Taxation Enquiry Committee. *Report, Vol. I.* (Karachi: Manager of Publications, June 1960).

14. Power, John H., "Industrialization in Pakistan", *Pakistan Development Review*, Vol. III, No. 2, Summer 1963.

15. Prest, A. R., *Public Finance in Underdeveloped Countries.* (London: 1962).

TABLE I

RATES OF EXPORT DUTY

Description	Unit	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
1. Raw hides	(*ad valorem*)	10	10	10	10	10	10	10	free								
2. Raw skin	(*ad valorem*)	15	5	5	5	5	5	5	free								
3. Raw wool	(*ad valorem*)			25	25	free											
4. Raw cotton																	
a: other varieties	(per bale of 400 lbs.)				180	90	90	90	135	115	115	115	115	75	75	75	25
b: *desi*					100	free	60	60	60	80	80	80	50	40	40	25	25
5. Cottonseeds	(*ad valorem*)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
6. Bamboos	(*ad valorem*)		10	free													
7. Cement	(per ton)		10	free													
8. Meshta fibre and raw jute																	
a: cuttings	(per bale of 400 lbs.)	6	6	6	10	5	5	5	5	10	10	10	10	10	10	10	10
b: all other descriptions		20	20	20	35	15	15	15	15	20	20	20	20	20	20	20	20
9. Rice	(per md.)	-2-3	-2-3	-2-3	-2-3	-2-3	-2-3	-2-3	free								
10. Fish *i*) fresh fish	(per md.)		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
ii) salted fish dry	(per cwt.)		4	free													
iii) unsalted	(per cwt.)		8	free													
11. Tea	(per lb.)	-4-	-4-	-4-	-3-	free	free	free	-3-	-6-	-6-	-6-	-6-	-6-	-6-	-4-	-2.5-
12. Jute mfg.	(per ton)	50	50	50	50	50	free										

Source: Annual Customs and Central Excise Administration Report, 1955-56, Pakistan Customs Tariff 1958, and Pakistan Customs Tariff 1960.

TABLE II

AVERAGE RATE OF DUTY ON IMPORTED GOODS BY INDUSTRIAL CLASSIFICATION

Code No.	Name of industry	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
2070	Sugar factories	63	63	63	63	63	63	62	62	62
2091	Edible fats and oils	46	46	46	46	46	46	44	44	44
2092	Tea manufacturing (per lb.)	8 As	8 As	8 As	8 As	8 As	8 As	8 As	8 As	8 As
2099	Food manufacturing (*n.e.c.*)	37	37	37	37	37	37	76	76	76
2100	Beverages industries (per gallon)	Rs. 100/8	Rs. 100/8	Rs. 100/8	Rs. 100/8	Rs. 100/8	Rs. 150/5	Rs. 150/5	Rs. 150/5	Rs. 128
2200	Tobacco manufactures	*	*	*	*	*	*	160	160	185
2311	Cotton textiles	76	76	76	76	76	76	153	153	153
2313	Jute textiles	48	48	48	48	43	48	68	68	68
2314	Silk and artsilk	*	125	125	125	125	125	200	200	200
2390	Manufacture of textiles (*n.e.c.*)	*	63	63	63	63	63	132	132	132
2420	Manufacture of footwear	46	46	46	46	46	46	87	87	87
2490	Fabricated textile manufactures	*	62	62	62	62	62	150	150	150
2500	Wood and cork manufactures	43	43	43	43	43	43	56	56	56
2600	Manufacture of furniture	43	43	43	43	43	43	110	110	110
2700	Paper manufactures	46	46	46	46	46	46	73	73	73
2800	Printing and publishing industries	free								
2900	Leather manufactures	64	64	64	64	64	64	99	99	99
3000	Manufacture of rubber products	51	51	51	51	51	51	38	38	38
3114	Manufacture of fertilizers	free								
3140	Medical and pharmaceutical preparations	17	17	17	17	17	17	15	15	15
3150	Perfumes, cosmetics and other products	49	49	49	49	45	49	73	73	73
3191	Matches	*	*	*	*	*	*	*	*	*
3199	Manufacture of chemical products	*	46	46	46	46	46	47	47	42

(Contd.)

TABLE II—(*Contd.*)

Code No.	Name of Industry	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
3200	Manufacture of products of petroleum and coal	*	*	*	*	*	*	39	39	36
3340	Manufacture of cement	49	49	49	49	49	49	65	65	65
3399	Nonmetallic mineral products	*	93	93	93	93	93	65	65	65
3400	Basic-metal industries	*	*	*	*	*	*	16.5	16.5	16.5
3500	Manufacture of metal products except machinery	48	48	48	48	43	48	62	62	62
3600	Machinery except electrical									
3700	Electrical goods	5	5		5	01	10	12.5	12.5	12.5
	a) electrical goods	79	79	79	79	79	79	104	104	104
	b) machinery	19	19	19	19	19	19	22	22	22
3800	Manufacture of transport									
	a) automobiles	80	80	80	80	80	84	89	89	89
	b) other transports	14	14	14	14	14	14	18	18	18
3900	Miscellaneous manufacturing industries	*	*	*	*	*	*	*	*	*

*For a few industries, average duties have not been calculated either for the whole period under study or for a few years, due to various complexities and difficulties. However, in the case of tobacco manufactures, the rates of duty prevailing before 1959 are considerably lower than the 1960 rates and for basic-metal industries the rates prevailing before 1959 seem to be slightly higher than the present rates of duty.

Sources: [1; 9; 10; 11].

TABLE III

AVERAGE RATE OF TAX ON DOMESTICALLY PRODUCED GOODS BY INDUSTRIAL CLASSIFICATION

Code No.	Name of industry	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
2070	Sugar factories and refineries	5.1	5.0	4.2	4.2	4.5	4.0	4.1	4.3	4.7
2091	Edible fats and oils	5.9	5.9	5.9	5.9	5.9	5.5	0.5	0.5	0.5
2092	Tea manufacturing	3.9	3.8	4.07	3.8	3.7	10.2	20.6	22	15.9
2099	Food manufacturing (*n.e.c.*)	5.8	6.1	5.6	5.4	5.8	5.3	4.3	3.9	4.1
2100	Beverages industries	18.3	18.3	18.3	18.3	18.3	18.3	18.7	18.7	18.7
2200	Tobacco manufactures	33	36	54	53	90	92	87	52	49
2311	Cotton textiles	*	18.2	18.2	23.0	24.8	21	21.4	24.5	25.4
2313	Jute textiles	*	*	*	*	*	*	*	*	*
2314	Silk and artsilk	*	27.2	27.2	27.2	27.2	27.2	27.2	27.2	6.0
2390	Manufacture of textiles (n.e.c.)	10	10	10	11.9	11.9	11.9	14.4	14.4	14.4
2420	Manufacture and repair of footwear	3.3	3.3	3.3	3.3	3.3	8.3	10.4	10.4	10.4
2490	Fabricated textile manufactures	3.6	3.6	3.6	3.6	3.6	3.6	4.4	4.4	4.4
2500	Manufacture of wood, cork and allied products	5.0	5.0	5.0	5.0	5.0	5.0	6.2	6.2	6.2
2600	Manufacture of furniture and fixture	10	10	10	10	10	10	12.5	12.5	12.5

(*Contd.*)

TABLE III—(*Contd.*)

Code No.	Name of industry	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
2700	Manufacture of paper and paper products	6.8	6.8	6.8	6.8	6.8	6.8	12.5	12.5	12.5
2800	Printing, publishing and allied products	exempted								
2900	Leather and leather products	9.8	9.8	9.8	9.8	9.8	8	8	8	8
3000	Manufacture of rubber products	10.6	10.6	10.6	10.6	10.6	10.6	13.1	13.1	13.1
3114	Manufacture of fertilizers	exempted								
3140	Medicinal & pharmaceutical preparations	exempted								
3150	Perfumes, cosmetic, soaps and toilet preparations	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
3191	Matches	35.5	35.5	38	41	43	67	64	62	62
3199	Manufacture of chemical products	10	10	10	10	10.3	10.3	12.8	12.8	12.8
3200	Manufacture of products of petroleum and coal	*	14.6	11.3	14.4	14.6	14.6	16.8	16.8	16.8
3340	Manufacture of cement	10	10	10	10	10	33.9	36.4	29.8	29.8
3399	Nonmetallic mineral products (*n.e.c.*)	12.8	12.8	12.8	12.8	12.8	12.8	13.8	13.8	13.8

(*Contd.*)

TABLE III—(*Concld.*)

Code No.	Name of industry	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
3400	Basic-metal industries	5.7	5.7	5.7	5.7	5.7	6.1	7.4	7.4	7.4
3500	Manufacture of metal products except machinery	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
3600	Machinery except electrical	exempted								
3700	Electrical goods									
	a) electrical goods	20	20	20	20	20	20	20	20	20
	b) electrical machinery	exempted								
3800	Manufacture of transport									
	a) automobiles	10	10	10	10	10	10	12.5	12.5	12.5
	b) other transport	exempted								
3900	Miscellaneous industries	*	*	*	*	*	*	*	*	*

*Indicates that there is some tax, but not given in the table due to some complexities.

Sources: *i*) The rates of excises have been taken from unpublished data provided by the Central Board of Revenue of Pakistan.
ii) For the rates of sales tax, *see* Table-II footnote.

TABLE IV

RANGE OF DUTIES ON IMPORTED GOODS BY INDUSTRIAL CLASSIFICATION

Code No.	Name of industry	1958	1962
2070	Sugar factories and refineries	37—75	50—100
2091	Edible fats and oils	6.25—62.8	6.25—68.7
2092	Tea manufacturing	*	*
2099	Food manufacturing (*n.e.c.*)	0—52.2	0—110
2100	Beverages industries	*	*
2200	Tobacco manufactures	*	40—300
2311	Cotton textiles	6.25—120	20.9—293
2313	Jute textiles	10—59.5	18—125
2314	Silk and artsilk	46—140	44—320
2390	Manufacture of textiles (*n.e.c.*)	32—92.5	35—293
2420	Manufacture and repairs of footwear	35.2—45.6	57.5—91
2490	Fabricated textile manufactures	43—92.5	35—293
2500	Manufacture of wood, cork and allied products	10—43	26.5—125
2600	Manufacture of furniture and fixtures	43—43	102—125
2700	Manufacture of paper and paper products	29.8—54	18—125
2800	Printing, publishing and allied products	free	free
2900	Leather and leather products	56—68	32—140
3000	Manufacture of rubber products	10—51.2	12.5—57.5
3114	Manufacture of fertilizers	free	free
3140	Medicinal and pharmaceutical products	0—42	0—40
3150	Perfumes, cosmetics, soaps and toilet preparations	49.5—72	43.7—130
3191	Matches	*	*
3199	Manufacture of chemical products	10—92.5	12.5—125
3200	Manufacture of products of petroleum and coal	*	12.5—46.2
3340	Manufacture of cement	49.6—49.6	63.1—68.7
3399	Nonmetallic mineral products	10—109	12.5—125
3400	Basic-metal industries	*	10—36.5
3500	Manufacture of metal products except machinery	10—120	23.7—125
3600	Machinery except electrical	*	0—55
3700	Electrical goods:		
	a) electrical goods	63—98	68—116
	b) electrical machinery	0—65	0—80
3800	Manufacture of transport:		
	a) automobiles	43—142	46.2—293.7
	b) other transport	0—30	0—40
3900	Miscellaneous industries	*	*

(*) Means not available. *Source:* Table II.

TABLE V

RATIO AND ABSOLUTE DIFFERENCES

PIDE Code	Name of industry	1954/55		1955/56		1956/57		1957/58
		Ratio	A. diff.	Ratio	A. diff.	Ratio	A. diff.	Ratio
2070	Sugar factories	12.3:1	57.9	12:1	58.0	15:1	58.8	15:1
2091	Edible fats and oils	7.8:1	40.1	7.8:1	40.1	7.8:1	40.1	7.8:1
2092	Tea manufacturing	—	—	—	—	—	—	—
2099	Food manufacturing (*n.e.c.*)	6.4:1	31.2	6.1:1	30.9	6.6:1	31.4	6.9:1
2100	Beverages industries	—	—	—	—	—	—	—
2200	Tobacco manufactures	—	—	—	—	—	—	—
2311	Cotton textiles	—	76.0	4.2:1	57.8	4.2:1	57.8	3.3:1
2313	Jute textiles	—	—	—	—	—	—	—
2314	Silk and artsilk	—	—	4.6:1	97.8	4.5:1	97.7	4.5:1
2390	Manufacture of textile (*n.e.c.*)	—	—	6.3:1	53.0	6.3:1	53.0	5.3:1
2420	Manufacture of footwear	13.1:1	42.7	13.1:1	42.7	13.1:1	42.7	13.1:1
2490	Fabricated textile manufactures	—	—	17.2:1	58.4	17.2:1	58.4	17.2:1
2500	Wood and cork manufactures	8.6:1	38.0	8.6:1	38.0	8.6:1	38.0	8.6:1
2600	Manufacture of furniture	4.3:1	33.0	4.3:1	33.0	4.3:1	33.0	4.3:1
2700	Paper manufactures	6.7:1	39.2	6.7:1	39.2	6.7:1	39.2	6.7:1
2800	Printing and publishing products	(..... exempted						
2900	Leather products	6.5:1	54.2	6.5:1	54.2	6.5:1	54.2	6.5:1
3000	Rubber products	4.8:1	40.4	4.8:1	40.4	4.8:1	40.4	4.8:1
2900	Leather and leather products	6.5:1	54.2	6.5:1	54.2	6.5:1	54.2	6.5:1
3000	Manufacture of rubber products	4.8:1	40.4	4.8:1	40.4	4.8:1	40.4	4.8:1
3114	Manufacture of fertilizers	(..... exempted						
3140	Medical and pharmaceutical preparations	—	17.0	—	17.0	—	17.0	—
3150	Perfumes, cosmetic, soaps and toilets preparations	3.8:1	36.2	3.8:1	36.2	3.8:1	36.2	3.8:1
3191	Matches	—	—	—	—	—	—	—
3199	Manufacture of chemical products	—	—	4.6:1	36.0	4.6:1	36.0	4.6:1
3200	Manufacture of products of petroleum and coal	—	—	—	—	—	—	4.9:1
3340	Manufacture of cement	4.9:1	39.0	4.9:1	39.0	4.9:1	39.0	4.9:1
3399	Nonmetallic mineral products (*n.e.c.*)	—	—	7.3:1	80.2	7.3:1	80.2	7.3:1
3400	Basic-metal industries	—	—	—	—	—	—	—
3500	Manufacture of metal products except machinery	7.2:1	41.4	7.2:1	41.4	7.2:1	41.4	7.2:1
3600	Machinery except electrical	—	5.0	—	5.0	—	5.0	—
3700	Electrical goods							
	a) electrical goods	3.9:1	59.0	3.9:1	59.0	3.9:1	59.0	3.9:1
	b) electric machinery	—	19.0	—	19.0	—	19.0	—
3800	Manufacture of transport							
	a) automobiles	8:1	70.0	8:1	70.0	8:1	70.0	8:1
	b) other transport	—	14.0	—	14.0	—	14.0	—
3900	Miscellaneous industries	—	—	—	—	—	—	—

(*Contd.*)

TABLE V—(*Contd.*)

RATIO AND ABSOLUTE DIFFERENCES

1957/58	1958/59		1959/60		1960/61		1961/62		1962/63	
A. diff.	Ratio	A. diff.	Ratio	A. diff.	Ratio	A. diff.	Ratio	A. diff.	Ratio	A. diff.
58.8	14:1	58.5	15.7:1	59.0	15.1:1	57.9	14.4:1	57.7	13.2:1	57.3
40.1	7.8:1	40.1	7.8:1	40.1	88:1	43.5	88:1	43.5	88:1	43.5
—	—	—	—	—	—	—	—	—	—	—
31.6	6.4:1	31.2	6.4:1	31.2	17.6:1	71.7	19:1	72.1	18:1	71.9
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
53.0	3.1:1	51.2	3.6:1	55.0	7.1:1	131.6	6.2:1	128.5	6.0:1	127.6
—	—	—	—	—	—	—	—	—	—	—
97.7	4.6:1	97.8	4.6:1	97.8	7.3:1	172.8	7.3:1	712.8	33.3:1	194.0
51.1	5.3:1	51.1	5.3:1	51.1	9.2:1	117.6	92:1	117.6	92:1	117.6
42.7	13.1:1	42.7	5.5:1	37.7	8.4:1	76.6	8.4:1	76.6	8.4:1	76.6
58.4	17.2:1	58.4	17.2:1	58.4	34 1:1	145.6	34.1:1	145.6	34.1:1	145.6
38.0	8.6:1	38.0	8.6:1	38.0	9.0:1	49.8	9.0:1	49.8	9.0:1	49.8
33.0	4.3:1	33.0	8.8:1	97.5	8.8:1	97.5	8.8:1	97.5	8.8:1	97.5
39.2	6.7:1	39.2	6.7:1	39.2	5.8:1	60.5	5.8:1	60.5	5.8:1	60.5
(.....exempted.....)										
54.2	6.5:1	54.2	8.0:1	56.0	12.3:1	91.0	12.3:1	92.0	12.3:1	91.0
40.4	4.8:1	40.4	4.8:1	40.4	2.9:1	24.9	2.9:1	24.9	2.9:1	24.9
54.2	6.5:1	54.2	8.0:1	56.0	12.3:1	91.0	12.3:1	91.0	12.3:1	91.0
40.4	4.8:1	40.4	4.8:1	40.4	2.9:1	24.9	2.9:1	24.9	2.9:1	24.9
(.....exempted.....)										
17.0	—	17.0	—	17.0	—	15.0	—	15.0	—	15.0
36.2	3.8:1	36.2	3.8:1	36.2	5.7:1	60.2	5.7:1	60.2	5.7:1	60.2
—	—	—	—	—	—	—	—	—	—	—
36.0	4.4:1	35.7	4.4:1	35.7	3.6:1	34.2	3.6:1	34.2	3.6:1	34.2
—	—	—	—	—	2.3:1	22.2	2.3:1	22.2	2.3:1	22.2
39.0	4.9:1	39.0	1.4:1	15.1	1.7:1	28.6	2.2:1	35.2	2.2:1	35.2
80.2	7.3:1	80.2	7.3:1	80.2	4.7:1	51.2	4.7:1	51.2	4.7:1	51.2
—	—	—	—	—	2.2:1	9.1	2.2:1	9.1	2.2:1	9.1
41.4	7.2:1	41.4	7.2:1	41.4	9.3:1	55.4	9.3:1	55.4	9.3:1	55.4
5.0	—	10.0	—	10.0	—	12.5	—	12.5	—	12.5
59.0	3.9:1	59.0	3.9:1	59.0	5.2:1	84.0	5.2:1	84.0	5.2:1	84.0
19.0	—	19.0	—	19.0	—	22.0	—	22.0	—	—
70.0	8:1	70.0	8:1	74.0	7.1:1	76.5	7.1:1	76.5	7.1:1	76.5
14.0	—	14.0	—	14.0	—	18.0	—	18.0	—	18.0
—	—	—	—	—	—	—	—	—	—	—

Sources: Absolute differences: Table II *minus* Table III.
Ratios: Ratio of Table II to Table III.

TABLE VI

AVERAGE RATE OF DUTY ON IMPORTED GOODS BY TYPES OF COMMODITY

Description	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63
Consumption Goods								
a) Essentials	35	35	35	35	35	55	55	55
b) Semi-luxuries	54	54	54	54	54	111	111	111
c) Luxuries	99	99	99	99	99	140	140	140
Raw Materials for Consumption Goods								
a) Unprocessed	26	26	26	26	26	27	27	27
b) Processed	43	43	43	43	43	50	50	48
Raw Materilas for Capital Goods								
a) Unprocessed	23	23	23	23	23	28	28	28
b) Processed	38	38	38	38	38	40	40	39
Capital Goods								
a) Consumer durables	71	71	71	71	81	85	85	85
b) Machinery and equipments	14	14	14	14	14	17	17	17

Source: Table II.

The Relation of Indirect Tax Changes to Price Changes in Pakistan

Ghulam Mohammad Radhu

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The Relation of Indirect Tax Changes to Price Changes in Pakistan

Ghulam Mohammad Radhu

INTRODUCTION

This study examines the effects of indirect taxes on prices in Pakistan. It is not a thorough study of the incidence of indirect taxes. It is an attempt to determine the relationship between changes in indirect tax rates and price changes. There have been several changes in the rates of sales and excise taxes in Pakistan in the past few years. The standard rate of sales tax was increased from 10 per cent to 12.5 per cent in 1960, and to 15 per cent in 1963. The rates of excises have been modified from time to time. It should be of great practical interest to see whether these taxes have been shifted to consumers or borne by producers and sellers.

Since studies of the effect of import duties on domestic prices of imports have been done in the Pakistan Institute of Development Economics [4], the coverage of present article is limited to sales and excise taxes only.

The Problem

It is generally held that sales and excise taxes are shifted to consumers either fully or partly. This belief is based on the argument that the imposition of a tax (or an increase in the rate of an existing tax) increases the marginal costs of each firm in the industry and that producers receive less profits (some marginal firms may even suffer losses). The lower profit induces them to restrict output which, given the demand, raises the price of the taxed commodity.

Generally, the tax-shifting process is determined by the slopes of demand and supply curves or, more simply, whether and to what extent supply can advantageously be restricted. The lower the slope of the supply curve (*i.e.*, the lower the absolute supply regressiveness), the less forward shifting there will be (given the slope of the demand curve). If supply elasticity is zero over the relevant range, taxes would not be shifted forward.

In Pakistan the elasticity of supply of most locally produced goods seems to be extremely low. Owing to the controls on imports, the maximum amount of consumer goods, capital goods and raw materials that can be imported is fixed for a given period of time. As the supply of most locally produced goods depends on the availability of imported capital goods and raw materials, the (artificially created) scarcity of these goods restricts the supply of domestically produced goods and the maximum supply becomes almost fixed. When demand at that fixed supply considerably exceeds the normal supply price, producers earn abnormal profits[1]. In such a situation the imposition of a tax simply causes a reduction in profit but does not affect price and output. This point can be illustrated with the help of Figure 1.

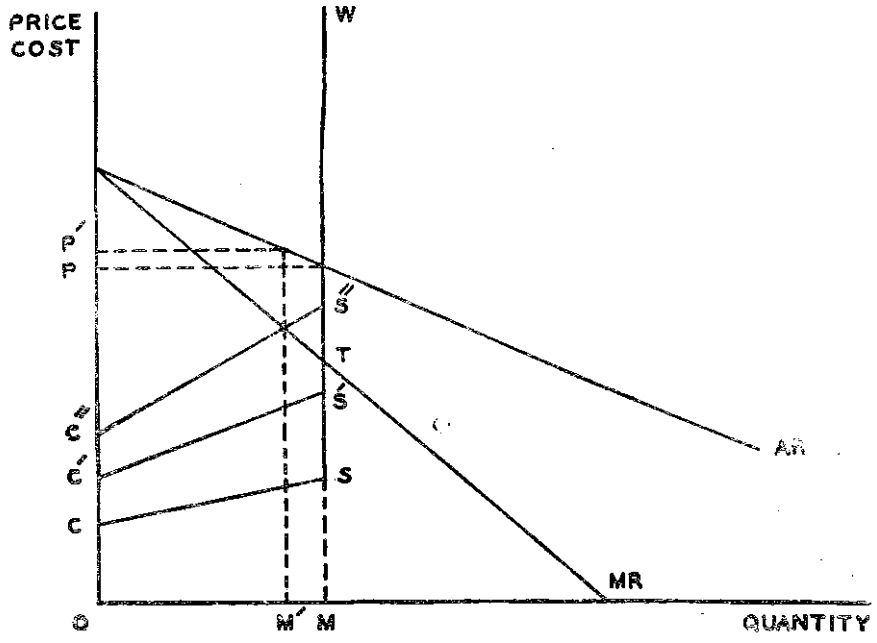

Figure 1. Indirect Tax Incidence with Limited Supply

[1]For a more extended discussion of this point, *see* [3]. It is also discussed more fully in [2 ; 4].

Suppose OM is the maximum output, beyond which the producer is incapable of extending production due to artificial or licensed supply restrictions on inputs. The marginal cost curve CSW, therefore, becomes vertical at this point and intersects the marginal revenue curve at point T. Hence price before taxation is equal to OP. Suppose an *ad valorem* tax is imposed resulting in an upward shifting of the lower segment of marginal cost curve from CS to C'S'. After the maximum output is reached, the new marginal cost curve C'S'W becomes vertical in the same way as CSW, and intersects the marginal revenue curve at the same point as before the tax. Price and output remain the same but profit is reduced. However, if the tax is high enough to raise the marginal cost curve from CS to C"S" *(i.e.,* to raise marginal cost above marginal revenue at price P), then both price and output are affected. In Figure 1, price would rise to P' and output (sales) would fall to M'.

The underlying assumption of our hypothesis is that imported capital goods and raw materials have few alternative uses and that the cost structure of various firms within an industry are not significantly dissimilar. Under these conditions, the imposition of a tax on one industry does not lead to a diversion of resources from the taxed industry to other untaxed fields. Even if we drop these assumptions the above figure would be likely to hold true for a group of industries, though it may not hold true for a single industry. Such would be the case because the maximum amount of imported inputs available for the industries as a group is fixed which tends to make the supply of domestically produced goods inelastic.

The problem is to find a suitable way of testing this hypothesis. We have attempted to do this by examining tax changes and price changes in the past few years, assuming that if an increase in tax has been followed by an increase in price and a decrease in tax has been followed by a decrease in price, then the tax has been shifted forward, but if an increase in the tax has been responded to by a decrease in price or by no change in price, then the tax has not been shifted forward. Prices may rise or fall due to other factors, however. There may be shifts in domestic demand or there may be changes in the flow of imports or exports which have substantial impact on relative prices. If imports of certain raw materials or capital goods are tightened, then the supply of some domestic commodities using those imports may be reduced, resulting in a rise in price. Or, if licences are issued liberally to import certain consumer goods, then the price of the import as well as the prices of the competing indigenous goods are likely to fall. Similarly, the Export Bonus Scheme and other export-promotion measures affect internal prices. Prices of agricultural commodities fluctuate widely. A crop failure of, say, jute or cotton would have serious implications, for not only would prices of jute or cotton rise sharply but they would cause a rise in the

prices of commodities using such raw materials.

Changes in other factors, therefore, have great impact on relative prices and they can offset the effect of change in tax on price. Even if we assume that supply is elastic and that taxes always tend to be shifted forward, it is quite conceivable that an increase in tax could be followed by a fall in price or by no change in price if at the same time demand is decreasing or supply costs are falling. This point is illustrated with the aid of Figure 2.

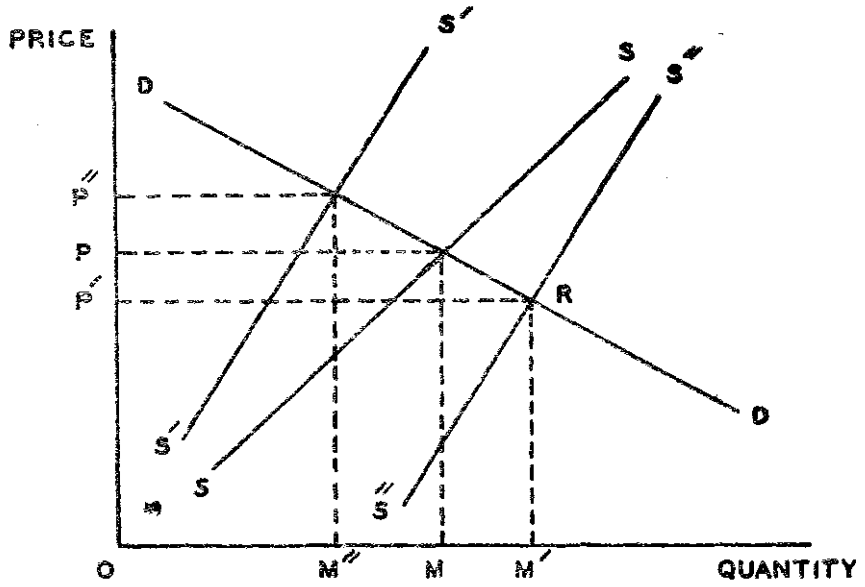

Figure 2. Price Effect of a Combined Tax Increase and Cost Decrease

Let SS be the supply schedule and DD the demand schedule. Then OP is the price before tax. Now an *ad valorem* tax is imposed which is shown as a shift in supply curve to the left from SS to S'S'. But at the same time supply costs fall causing a shift in supply curve to the right from SS to S''S''. S''S'' intersects DD at point R, hence the after-tax price is OP', which is lower than OP. In the absence of a change in supply costs, price would have risen to OP'' after the tax, but due to the fall in supply cost , the after-tax price becomes lower than pre-tax price.

Thus, so long as other factors do change a lack of correlation between tax changes and price changes does not necessarily imply that taxes are not "shifted forward", nor does a positive correlation necessarily mean "forward shifting". However, in a study of tax-price relationships a strong positive correlation between these two variables may be taken as an evidence of forward shifting.

The price used in our statistical analysis is wholesale price. We have used all data available, covering all taxable commodities that had tax changes in the years 1959/60, 1960/61, 1963/64 and for which wholesale price indices are given in the *CSO bulletin*. Thus, our sample is not a random sample. The size of our sample is limited by availability of data, yet the items covered in our sample are responsible for about 53 per cent of total tax revenue (in 1962/63) from indirect taxes.

Our sample consists of 33 observations. These observations are tax rate changes and corresponding price changes for the years 1959/60, 1960/61 and 1963/64. We hypothesize that the effect of tax changes at a given time (if other things are constant) should be reflected in the average price for the following year relative to the average price in the preceding year. For instance, the tax change announced in June or July 1960 is assumed to be reflected in the average price for the year 1960/61 (the fiscal year 1960/61 is from July 1, 1960 to June 30, 1961) relative to average price in 1959/60. It is not unrealistic to assume that output and price adjustments take place within a few months of the announcement of tax change, so that the average price change during the year following should reflect the tax change.

Empirical Findings

We have plotted on a scatter diagram (Figure 3) percentage point changes in tax rates against their corresponding percentage point changes in prices. As shown in the diagram out of thirty-three observations, sixteen observations indicate a positive relationship, that is an increase in tax rate is followed by an increase in price and a decrease in tax rate is followed by a decrease in price. The remaining observations, except two, have negative relationships. On the hypothesis that a positive relationship between tax changes and price changes implies forward shifting, our sample seems to suggest that almost 50 per cent of the time indirect taxes are shifted forward. However, on the basis of this information alone, we can hardly come to any such conclusion.

In order to further examine the relationship between price changes and tax changes we fitted a regression equation, taking price changes as a function of tax changes. This allows us to weight the direction of change by the amount of change. The result is given below.

$$Y = -3.197 + 1.001\,X$$
$$(1.57)$$
$$R^2 = .30 \quad N = 33$$

The coefficient of regression is not significantly different from zero. The

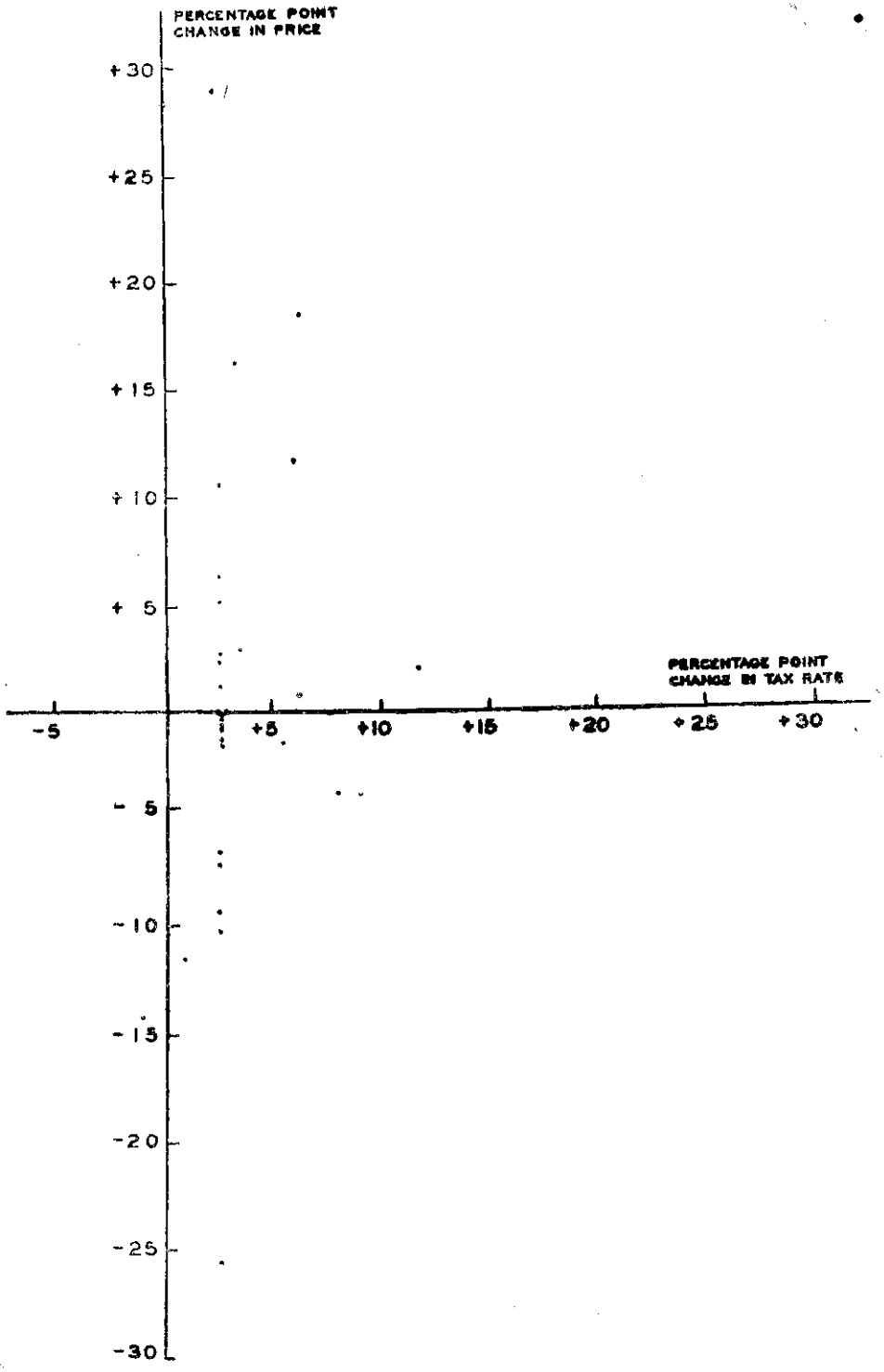

Figure 3. Price Changes in Relation to Tax Changes

test does not indicate any significant relationship between tax changes and price changes.

The next step in our analysis was to see whether the distribution of changes in prices is significantly different in years in which there were changes in tax rates than in years in which there were no changes. If taxes have effect on relative prices one would expect the distribution of price changes in tax-change years to be significantly different from the distribution of price changes in nontax-change years. To test this, we examined the price changes for the same commodities, for the nontax-change years (1958/59, 1961/62, 1962/63). We got a distribution in which twenty-two out of forty-two observations were plus and the remaining were minus, where plus indicates a rise in price and minus a fall in price. This distribution is strikingly similar to the distribution of changes in prices in those years in which there were changes in tax rates. We cannot infer that the distributions do not belong to the same population, which suggests that the underlying distribution of price changes is such that almost 50 per cent of the time prices rise and 50 per cent of the time prices fall. Thus, there is no evidence that tax changes have any effect on relative prices.

It must be pointed out here that our results would not be different if we analyse by separate years. If instead of aggregating three years, we take price changes and tax changes for 1959/60, 1960/61 and 1963/64 separately, even then the results would be the same. The responses of prices to tax changes of recent years are not different from that of previous years despite "liberalisation" of import restriction and greater availability of imported goods.

CONCLUSION

Import "liberalisation" in recent years has generally taken the form of increased supplies of foreign exchange for imports. This may have had the general effect of shifting the vertical portion of supply curve to the right and hence moving markets for goods with high import component of input relatively closer to "true" equilibrium, *i.e.*, tending to reduce the gap ST in Figure 1. But the time-trend of demand has also surely been rightward as well, thus, tending to maintain that gap. The problem for fiscal policy is to assess the situation in such a way as to make the presence or absence, and, hopefully, the appropriate size of the gap between marginal cost and marginal revenue less a matter of conjecture. Our analysis suggests that such a gap exists generally among the industries observed, though it tells us nothing whatever about the size of that gap. In the absence of such evidence, indirect-tax policy should probably be changed with caution.

On the basis of these limited results we cannot conclude that taxes are not shifted forward, for, we have not found any positive evidence of either shifting or non-shifting. However, these results somewhat support the hypothesis that supply fixity has placed the indirect tax burden on the seller in recent years.

In view of the lack of evidence of forward shifting there seems to be the possibility of raising additional revenue from indirect taxes without having adverse effects on price from the consumers' point of view. Whenever the government intends to impose a tax on a commodity it would be appropriate to look at the specific demand and supply conditions of that commodity and not presume that taxes are shifted forward and are paid by consumers. If indirect taxes are not shifted forward, therefore, revenue from indirect taxes comes mainly out of profits of sellers and producers, and is not paid by consumers. If we assume that profits are generally saved then the taxes fall mainly on saving rather than on consumption.

As a more general matter, our study suggests that it should not be assumed *a priori* (as is frequently the case in studies of tax incidence) that indirect taxes are shifted forward. Estimates of tax burdens based on such assumptions are questionable in the absence of positive evidence of forward shifting.

REFERENECES

1. Butt, Mohammad Amin and Saeed Mohammad, *The Law of Sales Tax*. (Lahore: Qaumi Kutub Khana, 1964).

2. Lewis, Stephen R. Jr., *Taxation of Agriculture and Economic Development*. Mimeographed. (Karachi: Pakistan Institute of Development Economics, September 1964).

3. Lewis, Stephen R. Jr. and Sarfraz Khan Qureshi, "The Structure of Revenue from Indirect Taxes in Pakistan", *Pakistan Development Review*, Vol. IV, No. 3, Autumn 1964.

4. Pal, Mati Lal, "The Determinants of the Domestic Prices of Imports", *Pakistan Development Review*, Vol. IV, No. 4, Winter 1964.

5. Pakistan, Central Statistical Office, *CSO Bulletin*, September 1964 issue.

Appendix A

SOURCES AND DESCRIPTION OF DATA

The Central Statistical Office publishes a monthly bulletin (*CSO Bulletin*) in which annual wholesale price index numbers for some selected commodities are given. Some of these commodities are not taxable, and are of little use for the purpose of this study. For a few taxable commodites "all Pakistan" indices are given but for others (mostly manufactured goods) separate indices for East and West Pakistan are given. We combined these separate indices in order to get all-Pakistan index numbers. The formula used for combining the two separate indices is, $I=\frac{E(W)+W(W)}{\Sigma\,(W)}$, where (W) indicates total production *plus* imports *minus* interwiug imports. The figures for weights are available in a CSO publication entitled *Wholesale Price Index for Pakistan.*

We wanted to use a deflated price index in order to get rid of changes in the general price level, but due to unavailability of a suitable deflator we had to use an undeflated price index. The general price index, as given in *CSO Bulletins,* is highly biased to food prices because the percentage weight of food in the general index is 71 for East Pakistan and 59 for West Pakistan. If we use the general price index as a deflator, it means essentially that we deflate the separate commodity indices by food prices. Similarly, if the "manufactures price index" is used as a deflator it means essentially that cotton and jute textile price are used as a deflator, for the weights of cotton and jute in the "manufactures price index" are very high. Since neither of these deflators appear to be appropriate, we have used undeflated figures.

The sources of data for sales and excise taxes are *The law of Sales Tax* [1] and an unpublished document (cyclostyled) provided by the Central Board of Revenue (CBR).

Appendix B

PERCENTAGE POINT CHANGES IN TAX RATES AND PRICES 1959/60, 1960/61, 1963/64

Sr. No.	Commodities	Name of the tax	Year	Changes in tax rates	Changes in prices
1.	Tea	Excise	1959/60	+ 6.45	+18.69
2.	Tea	Excise	1960/61	+ 5.63	— 1.54
3.	Matches	Excise	1959/60	+ 11.96	+ 2.01
4.	Vegetable ghee	Sales	1960/61	+ 2.5	— 0.74
5.	Vegetable ghee	Sales	1963/64	+ 2.5	— 0.33
6.	Vegetable ghee	Excise	1959/60	+ 0.98	—11.78
7.	Hides	Sales	1960/61	+ 2.5	— 0.46
8.	Hides	Sales	1963/64	+ 2.5	—10.27
9.	Skins	Sales	1960/61	+ 2.5	—25.55
10.	Skins	Sales	1963/64	+ 2.5	— 0.65
11.	General chemicals	Sales	1960/61	+ 2.5	— 9.46
12.	General chemicals	Sales	1963/64	+ 2.5	+ 1.33
13.	Footwear	Sales	1959/60	+ 6.0	+11.98
14.	Footwear	Sales	1960/61	+ 2.5	— 1.62
15.	Paper	Sales	1960/61	+ 6.25	+ 0.55
16.	Paper	Sales	1963/64	+ 2.5	+ 2.41
17.	Cement	Excise+Sales	1960/61	+ 18.89	+ 4.81
18.	Cement	Sales	1963/64	+ 2.5	+ 2.57
19.	Jute manufactures	Sales	1960/61	+ 2.5	+29.07
20.	Jute manufactures	Sales	1963/64	+ 2.5	— 7.29
21.	Paints	Sales	1960/61	+ 2.5	0
22.	Paints	Sales	1963/64	+ 2.5	0
23.	Paints	Excise	1959/60	— 1.0	—14.66
24.	Coal and coke	Sales	1960/61	+ 2.5	— 6.56
25.	Coal and coke	Sales	1963/64	+ 2.5	+ 6.47
26.	Cotton coarse	Excise	1960/61	+ 3.06	+16.33
27.	Cotton coarse	Excise	1963/64	+ 9.12	— 4.08
28.	Cotton medium	Sales	1960/61	+ 2.5	— 1.04
29.	Cotton medium	Excise+Sales	1963/64	+ 8.64	— 4.33
30.	Cotton yarn	Sales	1959/60	+ 3.75	+ 3.04
31.	Cotton yarn	Sales	1960/61	+ 2.5	+10.84
32.	Cotton yarn	Sales	1963/64	+ 2.5	+ 5.19
33.	Diesel oil	Excise	1963/64	+ 35.85	+40.66

Sources: *i*) Figures for tax rates are from [1] and an unpublished document provided by CBR.
ii) Figures for price index are from [5].

Part 2

Monetary Problems

Income Velocity and Pakistan's Second Plan

Richard C. Porter

This chapter originally appeared as an article in the Summer-1961 issue of *The Pakistan Development Review* and is the result of research carried out in 1961 when the author was a Research Advisor at the Pakistan Institute of Development Economics.

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Income Velocity and Pakistan's Second Plan

Richard C. Porter

All attempt is made in this paper to appraise the extent to which die income velocity concept[1] is a useful tool in the financial planning of the Second Five-Year Plan. For many years now, economists have been skeptical of the efficacy of velocity analysis, but most of this skepticism derives from its disastrous failure in the depression of the 1930's. Theorists generally concede its applicability in full-capacity situations[2], and it is in just such a situation that it is being applied in current analyses of the financial implication of Pakistan's Second Plan.

Nevertheless, the basic reason why the quantity theory is being revived in Pakistan, and in many other developing countries, is not so much its theoretical relevance as its great practicability. "Modern" Keynesian gap analysis is just not feasible where data on consumption and investment (not to mention their functional determinants) are totally lacking. Since data do exist for velocity analysis[3], it is used for want of a better.

ITfae concepts, income velocity, quantity theory, liquidity preference and real-money balance schedule are merely different ways of viewing a hypothesized relation between money and income. In this paper, the latter is preferred but the terms are used interchangeably.

2For a comprehensive discussion and extensive bibliography on the quantity theory of money, *see* [2; 8, especially Chapters 8 and 10].

3Though, as will be seen, such data may not be sufficiently accurate, plentiful, or rich (i.e., varied) to yield meaningful income-velocity estimates.

The conclusion of this paper, summarised in a sentence, is that resort to velocity analysis to avoid inflation is unnecessary, uncertain and misleading. The statistical estimates seem to "explain" movements in real-money balances quite well and conform to *a priori* predilections very satisfactorily, but grave uncertainties are incurred when these historical fits are used to predict the future.

Velocity analysis may be misleading if it suggests that the supply of money is a variable completely independent of its demand. In Pakistan today, it is very probably that the supply of money adjusts, at least partially, to its demand; this may mean that price levels are not determined by the demand for money but the reverse, that the money supply adjusts to the demand forthcoming at a particular price level. It is not only useless but dangerous to use a theory based upon the assumption of an exogenous money supply and an endogenous price level when the reverse may be true. And finally, it is suggested that the "new" approach of the Planning Commission may successfully avoid the need to use velocity (or Keynesian) concepts to ensure stable price levels during the Second Plan.

That application of quantity theory in Pakistan is uncertain should not be surprising to anyone; and to attack believers in a unique and meaningful income velocity is, admittedly, to annihilate straw men. Nevertheless, a rigorous analysis of the reasons for holding money balances in low-income economies and of the statistical evidence of the 1950's is an extremely useful prelude to the other problems of income velocity. The majority of the paper (Sections I-IV) is devoted to an examination of the theory, data and statistical estimates concerning income velocity in Pakistan. Although the final two sections argue that this work is not only unhelpful but even dangerous from the viewpoint of planning price stability during the plan period, the historical analysis does yield some interesting insights into the Pakistan

I. INCOME VELOCITY IN AN UNDERDEVELOPED ECONOMY

The first problem that arises in the use of the income velocity of money concept is that of definition of "money" and of "income". In industrialized countries, economists devote far more attention to the appropriate definition of money while, curiously, in underdeveloped economies, it is the definition of income that gives the greater difficulty.

To define money, one must decide jute how liquid an asset should be if it is to be included with currency as part of the money supply. It is generally conceded, even in nations where the banking habit is relatively underdeveloped, that current-account (or demand) deposits may be considered

perfectly liquid[4]. The question arises the world over whether time (or saving) deposits should also be included. The answer in Pakistan is, I think, a very definite *no*. There are too many assets that are generally held in large (and often unknown) quantities that are at least as liquid as time deposits for example, gold, government saving certificates, prize bonds, cooperative shares, and (at least somewhat) durable commodities. Time deposits are not considered, by most people, as the next most liquid asset after currency and demand deposits[5]; if they are included in the "money" supply, then the other assets listed above should not be neglected. But such an expansion of the concept of money leads not only to theoretical difficulties but, more critically, to something quite impossible to measure. It would be foolhardy to neglect the most accurate economic data published in Pakistan; money supply is, therefore, taken as currency in circulation (outside banks) and demand deposits (of other than governments).

In most studies of income velocity, some time is spent deciding between the various measures of income, GNP, NNP, National Income, and Disposable Income. The usual conclusion is that any of the first three are equally desirable. In countries where around, or less than, 10 per cent of the national income is traded in kind or self-consumed, the problems of income definition are easily solved. In Pakistan where perhaps 50 per cent is generated and disposed off without the use of money, one must consider carefully the reasons for a relationship between money and income before deciding on the appropriate definition of the latter.

Keynes suggested three reasons why individuals, and businesses, wish to hold money balances, the now famous trinity of transactions, speculative and precautionary demands. The first is clearly related to the number and amount of money transactions that people make; and these transactions, in turn, may be considered closely related to that part of income which is not bartered or self-consumed. The second Keynesian motive, speculative, is concerned with the alternative interest-earning and capital-gain-making opportunities foregone by holding money. The demand for precautionary balances is the most nebulous (though not so controversial as the speculative balances) of the three in the *General Theory;* Keynes says nothing of their determinants except that precautionary balances are probably not affected by interest rates [3, p. 171].

What Keynes calls the precautionary motive is probably very important in Pakistan. Many people live sufficiently near the margin of subsistence that they must make careful provision for emergency money needs. And the

4The relationship of demand deposits to currency has, in any case, been so stable over the period to be considered that it matters little whether one, the other, or both are made the basis of analysis.

5To many people, gold is far more liquid than even demand deposits.

unreliability of the markets or conversion of assets to money makes it desirable that much of one's wealth-for-emergencies be held in the form of money. While the division of money between balances for transactions and balances for precaution is an unnecessary dichotomy, there is little doubt that much money is held here that is rarely required for money transactions. Precautionary or emergency money balances probably form a not insignificant fraction of total wealth of individuals.

In the controversy over the "Pigou effect", one further determinant of desired money balances was suggested, namely, anticipated changes in price levels. In countries where gold, shares or commodities provide a ready hedge against the deterioration of wealth through inflation, expected price rises will reduce the willingness of the public to hold its wealth in the form of money; and, *mutatis mutandis*, expected price declines will increase it.

These four reasons for holding, or determinants of the demand for, money balances may be summarized in equation form:

$$\frac{M^D}{P} = f\left(\frac{Y-N}{P}\right) + g\left(\frac{W}{P}\right) + h(i) + j\,(P_e) \ldots\ldots\ldots (1)$$

where M^D is demand for money balances, P is the price level, Y is national income, N is the part of national income produced and distributed in the nonmonetized sector, W is wealth, i is the interest rate, and P_e is expected price changes. f, g, h, and j represent functions[6]. The first function, f, indicates the desire for transactions balances; the second, g, for precautionary balances; the third, h, for interest-speculative balances; and the fourth, j, for price-speculative balances.

All four of these determinants are not, in Pakistan, of equal importance. Interest rates have varied little since 1948; hence there is little reason to believe the interest-speculative effect to have been large. Similarly, prices, while they have moved greatly, have recorded erratic trends since Pakistan's inception; only recently has the economy's price level moved in the same direction for as many as four years. Since studies have indicated that the public requires continued price change for some time before its demand for money is affected[7], we might reasonably neglect this possible influence, except possibly in 1959/60. On the other hand, there are two conceivable

[6]The aggregation problem is neglected, and it is assumed that the functional form relevant to individuals (and businesses) is equally relevant to the sum of all individuals (and businesses). Also, interaction effects between the independent variables are neglected, but this simplifies the exposition (and would have to be neglected in the statistical work, anyway).

[7]Cf. [1, p. 88]. "Indeed, the reason why issuing money on a grand scale does not almost immediately lead to extreme flight from the currency is not due to inelasticiy in the demand for it but to individuals' lingering confidence in its future value. Their confidence maintains the lag in expectations, whereby the expected rates of price change do not at first keep pace with the rapidly rising actual rates".

reasons why the demand for money may be influenced very quickly by changes in prices, but we will defer their consideration to Section IV.

Thus, two of the four determinants, transactions and precautionary demands, may be considered primary; Equation (1) may then be rewritten

$$\frac{M^D}{P} = f\left(\frac{Y-N}{P}\right)+g\left(\frac{W}{P}\right) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(2)$$

Since we generally think that the demand for money adjusts to its autonomously determined supply[8], there is no reason for retaining the superscript D over the M, and it may be dropped. Finally, since all the variables are now divided by the price level, *i.e.*, are in real terms, we may omit the explicit consideration of P and write a subscript r to mean "real value of" the variable. Then Equation (2) may be rewritten

$$M_r = f(Y_r-N_r)+g(W_r) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(3)$$

It is this Equation(3) which we must now examine more carefully.

Transactions balances are generally considered proportional to the total value of transactions and hence[9]

$$f(O)=O,\ f'(Y_r-N_r) > O,\ f''(Y_r-N_r) = O \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(4)$$

Received literature is neither so vast nor so clear concerning precautionary balances (*i.e.*, the money-to-wealth function, g). Commonsense suggests that individuals will not hold a constant fraction of their wealth in the form of precautionary balances. Very poor people will usually hold a large fraction of their wealth as money[10]. Desired precautionary balances probably increase absolutely but decline relative to wealth as the latter increases; wealthier people have, moreover, greater and easier access to markets where nonmoney may be converted into money in emergencies. Thus, in the short run, for economies as for individuals, it is likely that a given percentage increase in wealth will be matched by a smaller percentage increase in the desire to hold precautionary money balances. Or, in other words, the short run elasticity of precautionary money balances with respect to wealth is positive but less than unity. Such a relationship is shown in Figure 1, the dotted line indicating a best-fit linear relation over the range of wealth, W_r^1 to W_r^2.

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[8]Although, in Pakistan, there is often good reason for believing that the money supply is at least partially determined by the public demand for money; *see* Section V.

[9]f′ and f″ mean the first and second derivatives of the function, f, with respect to (Y_r-N_r). Recent theory suggests that f″ might be negative for particular individuals at a moment of time, but there is still reasonable ground for treating the relation as strictly proportional for an economy over time. *See* [9, Pp. 241-247].

[10]Sometimes a fraction greater than one if they borrow in order to hold money. Such a situation may be completely rational when we remember that these are precautionary balances; borrowing only when one needs money for an emergency may be a time-consuming or uncertain process.

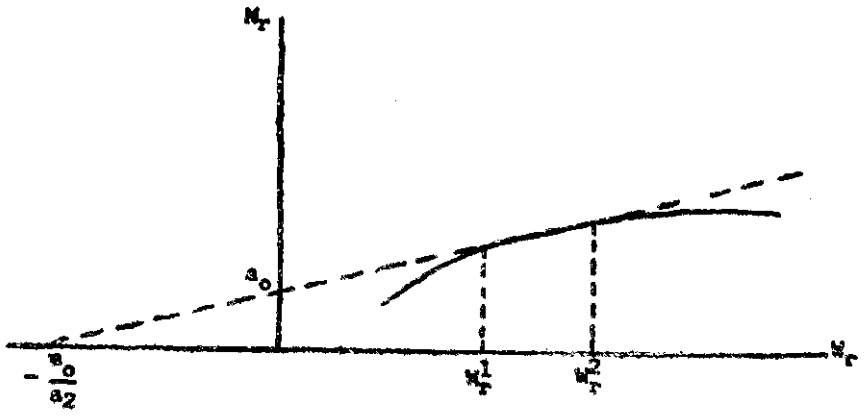

Figure 1

The general Equation (3) may be approximated over reasonably narrow ranges of income and wealth by the linear relationship.

$$M_r = a_0 + a_1 (Y_r - N_r) + a_2 W_r \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (5)$$

where a_0 is a constant representing the positive intercept (*see* Figure 1) of precautionary balances. All three coefficients, a_0, a_1 and a_2, may be considered positive[11] and, in the short run, fixed. Business demand for money balances has been neglected in the formation of Equation (5) simply because the theory of its determination is so unfinished. Rather than attempt to create this theory, we will hope that the form of (5) is not significantly altered by business demand[12].

Equation (5) would conclude our theoretical investigation if adequate data were available to permit statistical analysis of it.

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[11] a_2 may be assumed less than unity. It is possible, though unlikely, that a_1 is greater than unity.

[12] The fact that the ratio of currency (primarily held by individuals) to deposits (largely held by businesses) has not changed much over the 1950's suggests that the determinants of each category are similar.

II. LIMITATIONS OF THE DATA

In Pakistan over the years 1949-60, there are available 1) an accurate series of money supply (nominal, not real, of course), 2) a series of real-national income, and 3) a subseries of real-national income derived from agriculture. There is nothing that will readily serve for N_r, real nonmonetized national income, or W_r, real wealth, in Equation (5). Byu sing the national-income deflator developed by the Pakistan Institute of Development Economics, we can convert nominal into real-money supply, although the deflator is probably not without inaccuracy [4, Section IV].

The part of national income created and distributed in the nonmonetized sector has, by the consensus of most economists in Pakistan, not altered basically over the past decade (although year-to-year changes have surely occurred). Thus, we may approximate N_r by considering it to be some constant fraction of agricultural output, *i.e.*,

$$N_r = kA_r \qquad (6)$$

where A_r is real national income derived from agriculture and k is a constant ($0<k<1$). More generally, one might recognize that some nonagricultural production occurs in the nonmonetized sector, but surely it is, relative to the agricultural, a negligible component. Also more generally, we might try to capture the effect of year-to-year changes in A_r upon N_r by considering the possibility that the marginal influence is less than the average; in other words, while N_r is, on the average, a fraction (k) of A_r, N_r may change by much less than k times the change in A_r in the short run. Unfortunately, this leads us into the problem of the determinants of the farmer's marketed output, a theoretical and empirical quagmire that will be avoided here.

Next, consider the relation between national output and national wealth. National wealth, as here used, is not total productive capital nor even total physical capital, but is larger than this latter. It is here the sum of the wealth (net of debt) of all individuals in the economy, and as such, includes currency and government securities (held by individuals). Thus, wealth, as here defined, consists partly of productive physical capital, partly of nonproductive physical capital and partly of nonproductive, nonphysical wealth. There is much evidence that productive capital and out putchange proportionally at the margin, though whether this marginal capital-output ratio is higher or lower than the average ratio is a question nearly impossible to answer. Nevertheless, we have strong reasons for believing that the nonproductive components of wealth increase more than proportionately with output. Thus, the relation between total wealth and national output, if it can be considered stable in the short run, is probably

as pictured in Figure 2, with the dotted linerepresenting a straight line fit in the region from W_r^1 to W_r^2.

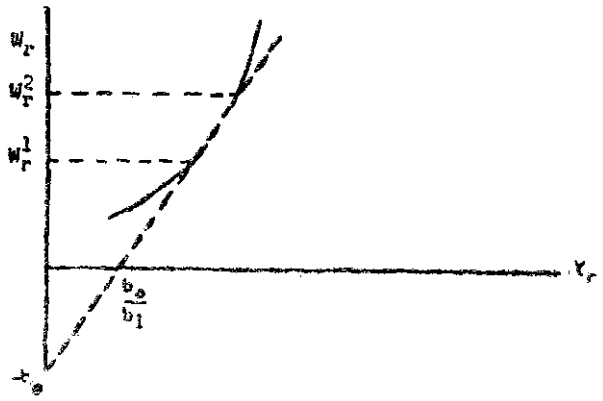

Figure 2

This permits us to use a (hopefully close) proxy for the unmeasurable variable, W_r, in Equation (5):

$$W_r = -b_0 + b_1 Y_r \quad \ldots\ldots (7)$$

where b_0 and b_1 may be considered positive constants, fixed in the short run.

Substitution of Equations (6) and (7) into Equation (5) yields a statistically usable determinant of the real-money supply.

$$M_r = (a_0 - a_2 b_0) + (a_1 + a_2 b_1)\ Y_r - (a_1 k)\ A_r \quad \ldots\ldots (8)$$

III. THE STATISTICAL ESTIMATES

In our quest for knowledge about Equation (8), we are simultaneously hampered by too many parameters to be estimated and too few data to estimate with. There are six parameters in (8) and not the very best set of data would permit better than three (nonlinear) equations with which to estimate

them. Moreover, the data are far from ideal, being eleven annual observations[13] (1949/50 through 1959/60) of dubious accuracy. The CSO is even now recomputing and revising its national-income (and components) figures; and the deflator which converts nominal-money supply into real-money supply is an anchor dropped hopefully into a sea of uncertainty[14].

Even if the possible inaccuracy of the data may be neglected, it fails for the statistician in another, very serious way. Real-national income and the real-national income share of agriculture correlate too well to be used simultaneously as independent variables in Equation (8)[15]. The reason for this near perfect relation is partly obvious, that a majority of Pakistan's total output is agricultural (60 per cent during the 1950's), and partly insidious, that the various nonagricultural shares of national income are often "estimated" merely by adding a few per cent to the previous year's figure with the result that there can be no, or small, fluctuations in nonagricultural income to reduce the close relation of the agricultural share to national income[16]. Moreover, the share of some nonagricultural sectors[17] is estimated largely on the basis of the agricultural share, further raising the correlation between A_r and Y_r[18].

Since A_r and Y_r are not to be trusted together in the same equation, Equation (8) may be written.

$$M_r^* = (a_o - a_2b_o - a_1kc_o) + (a_1 + a_2b_1 - a_1kc_1)Y_r \quad \ldots\ldots (10)$$

where A_r of Equation (8) is replaced by

$$A_r = c_o + c_1Y_r \quad \ldots\ldots (11)$$

If, for the moment, we neglect the clutter of parameters in (10), it may be rewritten very simply.

$$M_r^* = e_o + e_1Y_r \quad \ldots\ldots (12)$$

It should be noted that an asterisk has been inserted beside M_r of both (10)

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[13] All data are presented in Appendix.

[14] To the question why use this deflator at all, it may be noted that one must either relate real income or nominal money to current-price income. The latter requires the deflator also to convert constant-price into current-price income.

[15] The correlation coefficient (r) is .96 and the regression equation is:

$$A_r = 2709 + .44Y_r \quad \ldots\ldots (9)$$

[16] This estimating procedure applies to the small-scale manufacturing and services sectors which together composed 36 per cent of the nonagricultural national income in 1949/50 and 32 per cent in 1959/60. It is very likely that this procedure greatly underestimates the share of these sectors in recent years.

[17] Wholesale and retail trade, which was 24 per cent of nonagricultural national income in 1949/50 and 22 per cent in 1959/60.

[18] The techniques of national-income estimation are presented in [10, February-1955 issue].

and (12); M_r^* should be read as *desired* real-money balances. Whether the public is able to, or does, adjust its actual money balances to M_r^* without delay is important to the statistical form of Equation (12).

Three hypotheses about the public's rate of adjustment of actual to desired money balances are offered:

1) that such adjustment occurs within the year;

$$M_r = M_r^* = c_0 + e_1 Y_r \quad \ldots\ldots (13)$$

2) that the adjustment occurs with a lag of a year;

$$M_r = M_r^{*-1} = c_0 + c_1 Y_r^{-1} \quad \ldots\ldots (14)$$

where the superscript (-1) represents a one-year lag; and

3) that actual balances are adjusted by a fraction, s, of their deficiency (or excess) in the previous year.

$$M_r - M_r^{-1} = s (M_r^{*-1} - M_r^{-1}) \quad \ldots\ldots (15)$$

Or

$$M_r = se_0 + se_1 Y_r^{-1} + (1-s) M_r^{-1} \quad \ldots\ldots (16)$$

The least-squares fits of Equations (13), (14) and (16) are as follows:

$$M_r = -5224 + \underset{(.09)}{.47} Y_r \quad \ldots\ldots (13')$$

Degrees of Freedom = 9, n=11, r=.88

$$M_r = -5354 + \underset{(.07)}{.49} Y_r^{-1} \quad \ldots\ldots (14')$$

Degrees of Freedom = 8, n=10, r=.94

$$M_r = -5239 = \underset{(.15)}{.48} Y_r^{-1} + \underset{(.26)}{.02} M_r^{-1} \quad \ldots\ldots (16')$$

Degree of Freedom = 7, n = 10, r = .94

where r is the correlation coefficient, n the number of observations and the number of parenthese under the coefficients are their standard errors. Equation (16′) is obviously inferior; the addition of M_r^{-1} adds almost nothing to the fit, and its coefficient is almost zero. If the coefficient of M_r^{-1} is zero, s of Equation (15) is equal to one and the third hypothesis becomes identical with the second.

There are two reasons for preferring Equation (14) or (13). One is the higher correlation coefficient[19]. The other can be seen by inspecting the pattern of the residuals, *i.e.*, $M_r + 5224 - .47Y_r$ of Equation (13′) and $M_r + 5354 - 49Y_r^{-1}$ of Equation (14′) or, in other words, actual minus estimated real-money balances. These residuals, and the change in actual real-money balances, are shown in Table I. While there is no observable relation between the residuals of Equation (14′) and $\triangle M_r$ ($= M_r - M_r^{-1}$) of that or the succeeding year, there is a very clear correlation between the residuals of Equation (13′) and M_r of the following year. In every year, a negative (positive) value of the residual in (13′) is followed by a rise (fall) in real-money balances in the next year. The residual is the difference between actual and *estimated* real-money holdings; if one thinks of it more

TABLE I

RESIDUALS

Year	Equation (13′)	Equation (14′)	$M_r - M_r^{-1}$
	(1)	(2)	(3)
	(..... *in million rupees* .....)		
1950/51 ..	—315.7	—2.8	385.0
1951/52 ..	246.9	—47.8	486.0
1952/53 ..	—295.1	—359.3	—391.2
1953/54 ..	—226.3	6.1	522.4
1954/55 ..	540.9	494.1	959.9
1955/56 ..	683.7	276.1	—17.5
1956/57 ..	—282.3	73.4	—369.5
1957/58 ..	—16.2	—186.2	361.0
1958/59 ..	230.3	—66.6	215.9
1959/60 ..	—375.3	—187.0	—147.3

Note: The sum of the figures in Column (2) is zero except for rounding errors. The sum of those of Column (1) is, except for rounding errors, equal to minus the omitted residual for 1949/50 (which is—190.3).

[19]The loss of a degree of freedom is not too important since it derives not from the gain of a variable, but from the loss of an observation (Y is lagged a year).

broadly as the difference between actual and *desired* holdings, it becomes clear that a lagged adjustment model would be preferable. Even if one hesitates to identify estimated with desired balances, a second equation (relating M_t with the lagged residuals) or a new variable (M_t^{-1}) would be needed to achieve a full Explanation of M_t; Equation (14') is probably a better choice[20].

Equation (14') can be rewritten, with(14),

$$M_t^* = -5354 + 49Y_t \quad \ldots\ldots(17)$$

Can we learn from (17) anything of the original parameters of Equation (10)? The estimates suggest:

$$a_0 - a_2b_2 - a_1kc_0 = -5354 \quad \ldots\ldots(18)$$

$$a_1 + a_2b_1 - a_1kc_1 = .49 \quad \ldots\ldots(19)$$

We can surely not solve two equations for eight parameters[21]; in fact, the only thing that we can do is to check various values of the parameters to ensure that the .49 estimate does no violence to commonsense.

Consider the definition of real wealth here used as the sum of money (M_t), productive physical capital[22] (C_t) and a remainder of all other wealth (R_t):

$$W_t = M_t + C_t + R_t \quad \ldots\ldots(19)$$

The derivative of (19) with respect to Y_t yields another definition:

$$\frac{dW_t}{dY_t} = \frac{dM_t}{dY_t} + \frac{dC_t}{dY_t} + \frac{dR_t}{dW_t} \cdot \frac{dW_t}{dY_t} \quad \ldots\ldots(20)$$

Or

---

[20]The positive serial correlation of the residuals to Equation (14') indicates that the estimate of e_1 (.49) will be biased. Correlation of the first differences of M_t and Y_{t-1} reduces the serial correlation of residuals and yields slightly higher estimates of e_1 (.55 or .62, depending upon whether a constant term is used). With such a small sample, however, bias is unavoidable and first differencing is a specious sophistication.

[21]Even if $c_0 = 2709$ and $c_1 = .44$ from Equation (9), there remain six parameters.

[22]This, of course, includes equity in firms owning productive capital. We neglect here the fact that individuals do not really "own" all the physical capital of an economy. The physical capital of producing firms generally exceeds the equity outstanding with the result that the C_t held by individuals is less than that of the economy (and, correspondingly, the R_t is greater).

$$\frac{dW_r}{dY_r} = \frac{\dfrac{dM_r}{dY} + \dfrac{dC_r}{dY}}{1 - \dfrac{dR}{dW_r}} \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (21)$$

But dM_r/dY_r is about .50 (by the estimate of Equation (14'), forgetting the lag); dC_r/dY_r is usually assumed to be around 3.5[23]; and dW_r/dY_r is b_1 of Equation (7). Thus, (21) can be approximated by

$$b_1 = \frac{r}{1 - \dfrac{dR}{dw_r}}$$

b_1, the increase in wealth accompanying a rise in income, depends upon the fraction of the increased wealth the public wishes to hold in nonmoney, nonphysical-productive-capital forms (R_r). The various possible combinations may be seen in Table II.

TABLE II

b_1	Propensity to hold increased wealth in form of:		
	Money (dM_r/dW_r)	Capital (dC_r/dW_r)	Rest (dR_r/dW_r)
(1)	(2)	(3)	(4)
4	.13	.87	.00
5	.10	.70	.20
6	.08	.58	.33
8	.06	.44	.50
10	.05	.35	.60

Commonsense suggests that values of b_1 above 10 are unlikely in Pakistan today although one can easily conceive of situations where dR_r/dW_r could be greater than .60.

[23]Such a "capital"-output figure is implicit in both the First and the Second Five-Year Plans.

Casual empiricism of a much lower order is required to place limits upon k, the fraction of agricultural output, which remains in the non-monetized sector (*see* Equation (6)). The usual estimate is that k is about .7; the range, $.4<k>1.0$, is certainly sufficiently wide to include the actual value. The various possible values of a_1 and a_2, in Equation (19), may now be plotted for different values of b_1 between 4 and 10 and k between .4 and 1.0 (with c_1 assumed to be .44). These are shown in Figure 3.

The lines with a_2 intercept of .123 are for $b_1 = 4$, of .070 for $b_1 = 7$, and of 0.49 for $b_1 = 10$; the lines with a_1 intercept of .60 are for $k = .4$, of .71 for $k=.7$, and of .88 for $k=1.0$.

Figure 3 places closer limits upon a_2 than we had reason to except. If one accepts the .49 estimate of Equation (14'), then the fraction of an increase of wealth that the Pakistan public holds in the form of real non-transactions money balances is probably less than .10. Such a range appeals to commonsense which is reassuring. It is unfortunate that Figure 3 is not so charitable as to give us also an indication of the value of a_1.

While the .49 estimate does no violence to our expectations, it must be remembered that any figure from perhaps as little as .10 up to about 2.0 could be justified, at least partially, in terms of Equation (19). It would be extremely unlikely that the statistical estimates of Equation (14') could fail to fall in this range.

IV. THE EFFECTS OF THE RATE OF PRICE CHANGE

In Section I, it was stated that the available evidence indicates a high degree of public confidence in the value of money; prices must rise and rise and *rise* before general speculation against money balances becomes significant. Pakistan has certainly undergone nothing approaching a hyper-inflation. Nevertheless, there are two reasons why money balances might be affected, quickly and significantly, by the rate of price change.

Prices in Pakistan turn upward (downward) sharply only in a year of large rice and/or wheat shortages (surpluses). This relationship is no secret and the success of the harvest is readily noticeable. There are many who are able, and prefer, to hold speculative cereal stockpiles to money in such years. Thus, the demand for real-money balance on the part of potential grain speculators may change almost simultaneously with (or even ahead of) price movements. What is surprising is not the existence of such shifts (which are merely examples of traditional price-change-speculative balances), but the great rapidity with which expected prices alter. This follows from the fact that each wing is very near to a one-product economy—

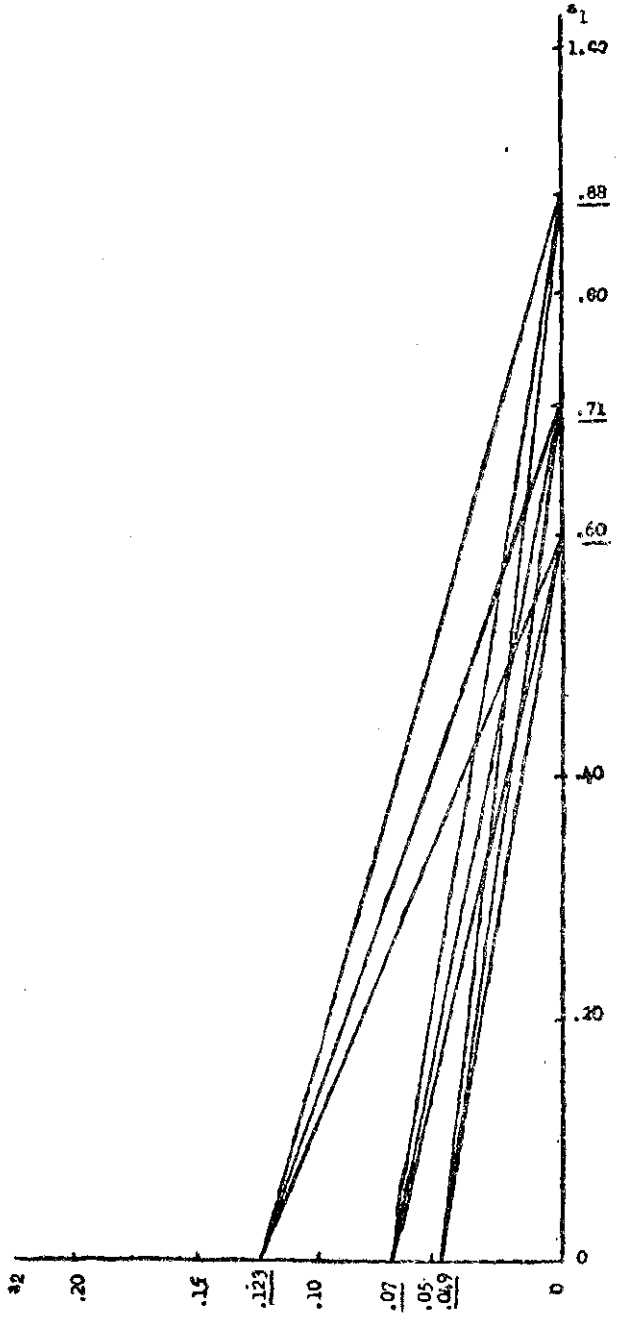

Figure 3

it is easy to forecast movements in the general price level on the basis of knowledge of only one commodity's supply situation. Forecasting price movements is not so easy in developed economies (with more diversified production), with the result that prices may continue to rise for some time before expectations of future price rises became widespread.

The second reason for sudden effects of price changes on desired money balances also derives from the fact that big rises (or falls) in the rate of change of prices occur when crops are unusually bad (or good). Thus, for most people a rise in prices is concurrent with a food shortage, and vice versa. If their food consumption is not to suffer (or suffer greatly), urban families must spend more of their money incomes on food. Increased food expenditure will be partly at the expense of other purchases, but also at the expense of saving. After all, money balances (beyond transactions needs) are held for the very purpose of meeting such emergencies; hence, when food prices (and the price level) are rising, demand for real-money balances will fall. This propensity will also occur among farmers, though in different guise. They will defend their food consumption by reducing the marketed fraction of their produce more than proportionately to their decline in output. This may or may not induce farmers to hold lower real-money balances for precautionary purposes; but it surely will raise the fraction of national income traded (or self-consumed) in the nonmonetized sector. Thus, the demand for real-money balances for transactions purposes will also be reduced at a time of food crop failures and rising prices (and vice versa).

There is no need to seek long, or even short, histories of price change in order to explain movements in the demand for real-money balances on this account. The rate of price change in a given year, $\dot{p}\left(=\frac{P-P^{-1}}{P^{-1}}\right)$, may induce a change in desired real balances, $\dot{M}_r^*$, without delay[24].

Since the data of Section III suggest a one-year lag in the adjustment of actual to desired balances, *i.e.*,

$$M_r = M_r^{*-1} \qquad (14)$$

we can consider the residuals of Equation (14') as the amount of real-money balances desired for reasons other than transactions and wealth. These residuals, u (*see* Table 1, column (2)), are the difference between desired real

[24]Alternatively, one might say that desired precautionary balances (M_r^*) are unchanged, but that actual balances (M_r) are altered.

balances of the previous year, M_r^{*-1},and the desired balances explained by reference to real income. If we assume that real balances always adjust exactly to last year's desired level, then Equation (14) can be rewritten.

$$u = (M_r^{*-1}) - (e_o + e_1 Y_r^{-1}) \quad \ldots\ldots(23)$$

In brief, u is a plausible measure of real balances desired for rate-of-price change reasons in the previous year.

The simplest formulation of this relationship is

$$u = m_o + m_1 \dot{p}^{-1} \quad \ldots\ldots(24)$$

where m_1 is expected to be negative. It should be noted that Equation(24) is *not* a lagged relation since u refers to the lagged desired balances for other reasons(*see* Equation (23)). But there are many other ways to formulate the relation and several are given in Table III. The basic form of the Table III equations is

$$u = n_o + n_1 u^{-1} + n_2 \dot{P} = n_3 \dot{p}^{-1} \quad \ldots\ldots(25)$$

and several variations are fitted.

TABLE III

Equation number	Values of the coefficients				Correlation coefficient**	Degrees of*** freedom
	n_o	n_1	n_2	n_3		
	(1)	(2)	(3)	(4)	(5)	(6)
(24)	25.2	0*	0*	1208.0	.54	7
(26)	6.9	0*	—212.4	0*	.09	7
(27)	2.4	1*	0*	—1107.8	.09	7
(28)	33.4	1*	—1589.9	0*	.51	7
(29)	17.2	.35	0*	—1172.7	.64	6
(30)	26.4	.73	—1216.2	0*	.55	6

*These coefficients are assumed 0 or 1; they are not estimated.
**Sign is neglected.
***Observations of u are from 1951/52 through 1959/60.

There is no need for an extensive discussion of these results since the number of degrees of freedom has dwindled to the point where significance is almost impossible. The signs are always negative of the $\dot{P}^{-1}$ (and $\dot{P}$) coefficients[25]. Thus, these equations are evidence of rapid shift in the real money-balance schedule in the face of pricechange. It is possible that averages of several past price changes might offer a superior explanation, but with so few observations it would be foolish to waste more in lag-testing.

It should be recognized that this rapid adjustment of real balances (inversely) to changes in prices is a destabilizing influence in the economy. The rapid adjustment means that, when prices rise, there is speculative activity which is removing food from the economy and/or that inelastic food demands are being activitated through declines in money balances; any initial rise in food prices can thereby be sustained and even furthered by the money-balance reduction. The movements of Pakistan prices in the 1950's, as crops fluctuate, suggest that such destabilizing movements have occurred. Fortunately, their cumulative effect is halted by the next crop.

V. A TIME FOR HESITATION

There are several caveats that need expression concerning the work of the preceding two sections before any application is made. The first concerns the trustworthiness of the data that have been used. In Section II, doubts were advanced about the accuracy of both the national income (in constant prices) and the national income price index series. The former is even now under reappraisal and there is no reason why great improvement cannot be achieved. Of prices during the 1950's, we may never be accurately informed. When rationing, controlled prices and artificially cordoned purchasing and distributing regions coexist with free-, gray-, and black-markets, price becomes a hazy concept. Official prices may be meaningless, and official attempts to discover "the free price" are fraught with possible error.

Some indication is necessary of the sensitivity of the estimates of Section III to inaccuracy of data. Suppose that the "true" percentage annual changes of prices and real-national income were 2 per cent and 1 per cent higher, respectively, than those recorded (*see* Appendix)[26]. The estimates of equation (14') then become

---

[25]Clearly, $\dot{P}$ cannot affect last year's desired balances; in the regressions with $\dot{P}$, u must be interpreted as the residual between this year's actual balances and last year's desired balances, *i.e.*,

$$u = M_r - M_r^{*-1}$$

[26]*I.e.*,

$$\left(\frac{\Delta P}{P_{-1}}\right)_{\text{true}} = \left(\frac{\Delta P}{P_{-1}}\right)_{\text{recorded}} + .02$$

and similarly for real income, with Y_r replacing P and .01 replacing .02 in the above formula (Δ represents absolute annual change). Nominal money is assumed correctly measured.

$$M_r = 21 + .18Y_r^{-1} \quad (r = .80) \qquad (31)$$

The fit is quite respectable, and the coefficient of Y_r^{-1} is .18, only about one-third the value estimated in Section III. Small inaccuracies in the data may generate large inaccuracies in the estimated values of the coefficients[27].

It is probably more crucial to notice the problems that arise in the use of the estimates of Sections III and IV, even if the data are accepted as reasonably accurately measured. There are four primary reasons for skepticism concerning predictions from the estimates. The first applies generally to all such time-series estimates, but the other three result from the economic environment of Pakistan over the past ten years.

1. When variables are related by means of time-series data, the assumption is implicitly made that the structural relationship has not changed, at least systematically, over the period of the observations. One must always recognise the possibility that a series of upward shifts in a function (S_1 S_1, S_2 S_2, *etc.* in Figure 4) will generate a locus relation (LL in Figure 4); the statistical estimates will, as a result, be of the locus and not the actual functions.

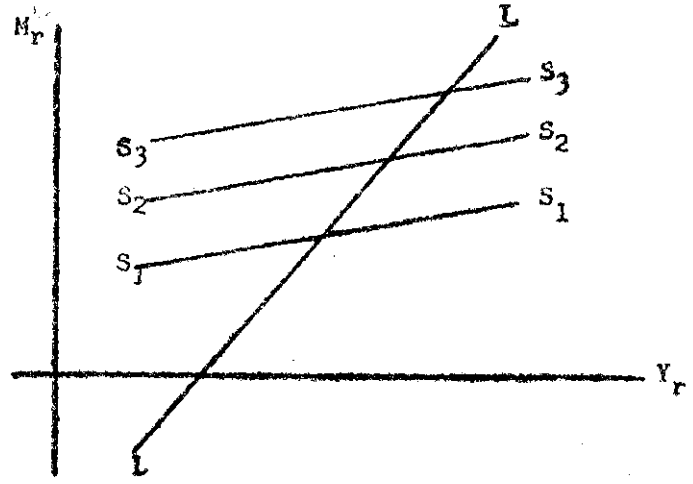

Figure 4

27It is tempting to suggest an errors-in-variables (or weighted regression) model in place of the errors-in-structure concept used here. There are, however, several difficulties: *i*) there is no way to combine the two approaches and to treat $M_r = e_0 + e_1 Y_r^{-1}$ as perfectly specified except for measurement errors in M_r and Y_r would be grossly inaccurate; *ii*) the standard errors of the measurement of the variables certainly increases over time (as the variables, M_r and Y_r, increase) but there is no way to consider this in weighted regression. In short, we would trade one kind of error for another, perhaps greater, kind.

This problem is not always insurmountable. If one assumes that any upward shifts will continue in the future, the locus estimates (of LL) may be just as useful for prediction as is knowledge of the SS curves and their manner of shift. The dangers in such an assumption for Pakistan are patent; there is no reason for assuming that the public's desire for real-money balances has shifted in any consistent pattern over the 1950's. A second way of avoiding the locus-fit is to include explicitly a time variable in the intercept (or slope, if rotation, rather than shifts, over time is suspected). When the independent variable Y_r is so well correlated with time, however, such a technique is not feasible.

2. The use for prediction of an historically-estimated function requires the assumption, mentioned above, that the "structure" is unchanging or is changing in a consistent fashion. Pakistan's brief and turbulent economic history will not permit such assumptions. The observations begin in 1949-50, only two years after the tremendous political and social upheavel of independence and partition. Currency and bank deposits were probably not even the most liquid of assets, and they were certainly not the least risky. From a time when money balances were mistrusted and even eschewed, there was undoubtedly a long period of rising desires for real balances (and for those near-moneys which complement a stable political environment, *e.g.*, time daposits). This period has now ended, and it is very possible that a shift away from money balances has begun — a shift not to the near-moneys of flight, gold and jewellery, but to the near-moneys of safety, time desposits, cooperative shares, savings certificates, *etc.*

There is evidence for these suggestions in the residuals of Equation (24). These residuals may be considered as that part of actual real-money balances not explained by reference to real income or to rate of change of price levels; if we can further assume that this remainder represents the shift in tastes towards or away from real-money balances as a form for wealth holding, then the pattern of these residuals over time is interesting. They are plotted in Figure 5[28]. These residuals suggest that tastes were moving to greater real-money balances (apart from income- and price-change considerations) up to 1954/55, and then away from mony thereafter. For the last three years, there has been a drop each year in the residual, the average annual fall since 1954/55 being a not trivial 120 million rupees. The pattern of the residuals is not inconsistent with the possibility that the desired real-balance schedule was rising as S_1S_1 to S_3S_3 in Figure 4 in the early years, but has stabilized at S_3S_3 (or perhaps has been falling towards S_2S_2) in recent years.

A simple test may be made of this possibility without consuming

[28]The values of the residuals equal to $(u-25.2+1208.0\ \dot{P}^{-1})$ are for the years 1951/52 through 1959/60 respectively:—120.6,—2772,—49.5, 406.4, 71.8, 233.0, 59.0, —115.2,—207.5.

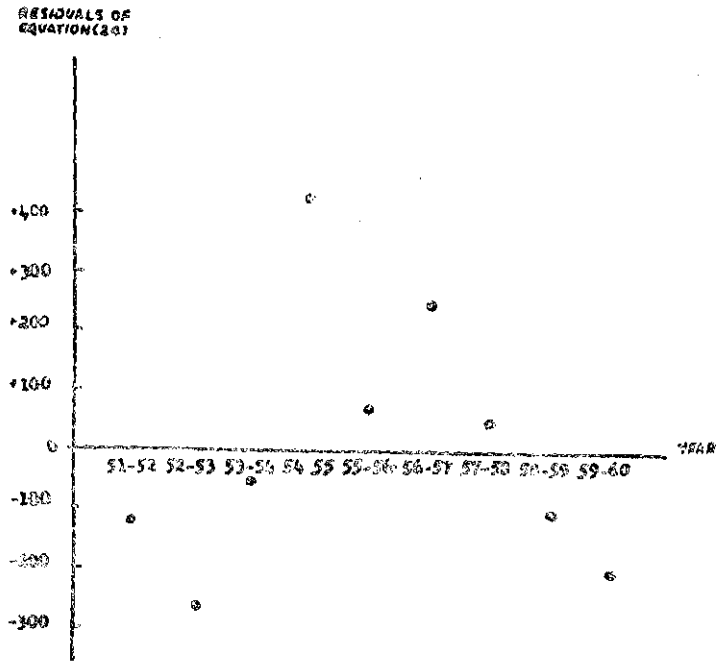

Figure 5

more than one degree of freedom. M_r rose greatly in 1954/55 (and Y_r in 1953/54). On the assumption that the intercept of the real-money-balances schedule changed at that time (but at no other time), we can re-estimate Equation (14′):

$$M_r = \left\{ \begin{matrix} -960 \\ \\ -244 \end{matrix} \right\} + .24Y_r^{-1} \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (32)$$

where, in the brackets, the upper constant term applies over 1950/51 through 1953/54 and the lower constant over 1954/55 through 1959/60. The correlation coefficient of (32) is .97. The scatter of (M_r, Y_r^{-1}) points are plotted in Figure 6 along with Equations (14′) and (32). While certainly not conclusive, this lends support to the above suggestion that Equation (14′) is the locus of two (or more) flatter but upward shifting real-balance schedules.

3. The historical observations from which the estimates of Sections III and IV are made are largely drawn from times when prices (and purchases) were controlled to varying degrees. This fact may have had a large effect upon the size of desired money balances. Here, we will consider briefly two possible reactions to shortages at controlled prices (and high blackmarket prices) on inessential "luxury" items: *i*) that the situation is expected to be permanent; and *ii*) that the shortages are expected to be temporary[29].

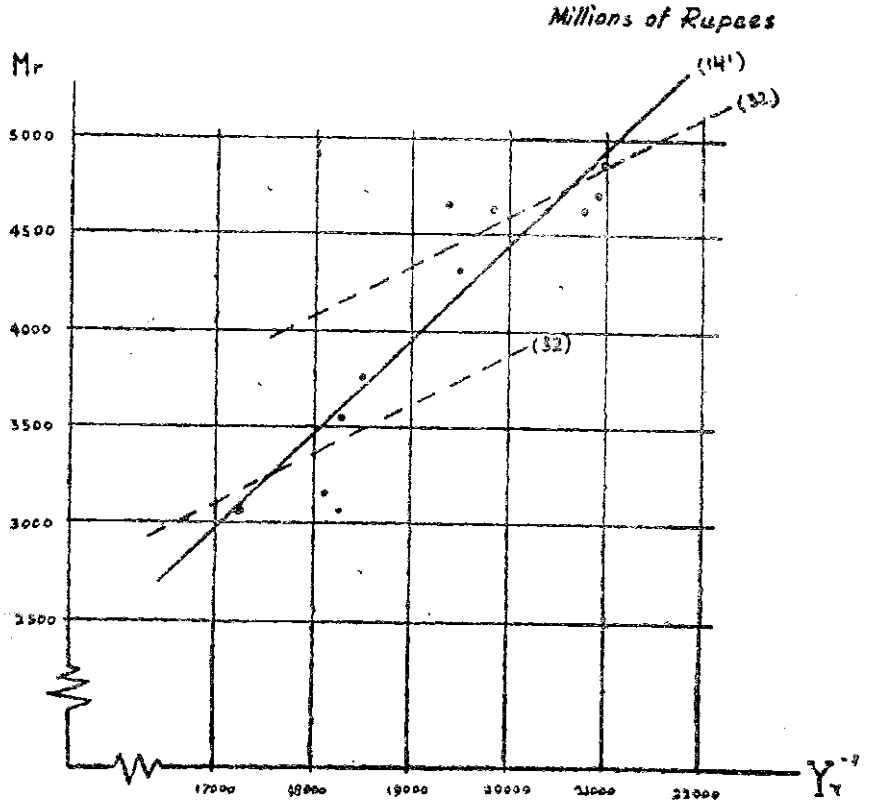

Figure 6

[29]There is, of course, a third situation that the shortages are expected to become worse. This possibility may, I think, be neglected in the present context.

i) If permanent shortages (on legal markets, and higher prices on blackmarkets) are expected, there is reasons for believing that real-money balances will rise. Such balances are an economic good and, in these circumstances, their cost to the consumer, in terms of foregone consumption opportunities is reduced. Another reason is that many individuals either will adjust slowly their consumption habits to the blackmarket price or will prefer to wait for a chance to buy the article legally at the artificially low controlled price. Such queues may be of long duration, during which time higher cash balances will be held[30].

ii) If the shortages are expected to be temporary, there is even greater reason to postpone purchases; and postponed consumption is present saving. Not only will savings rise more when the shortages are expected soon to pass, but a much greater proportion will be held in money balances, to be ready for imminent spending.

Controls on business imports for investment purposes have induced similar reactions. The growing time-lag between the investment decision and the actual import has probably meant much large business-money balances. And all these larger balances, of businesses and of individuals, are desired balances in the context of the control situation, however preferable other situations might be.

In the past year, more liberal import licensing and export bonus vouchers have reduced shortages of luxury goods, and it may well be that desired money balances will decline concomitantly. There is no way of knowing what part of the "desired money balances" we have estimated have been desired only in the context of the controls in force. That they have not been negligible is indicated by the data for 1960/61. The money supply rose by only about 4 per cent between 1959 and 1960 (December figures); the price level, by almost any estimate, will surely, in 1960/61, rise by at least that[31]. It is not improbable that real-money balances will have declined by 10 per cent during 1960/61 (from 4692 million rupees in December 1959)[32].

The theory of price controls and quantity restraints is in a very preliminary state, and these comments on their possible effects upon money balances are speculative (to say the best). Nevertheless, the warning is

30Of course, physical queues outside a fair price shop seldom entail the holding of cash balances more than an hour or two. But there is the government licensing queue also, and the collection of the proper forms, licences and permissions may take months, even years.

31CSO figures on cost of living indicate that prices had already risen by 4 per cent between June and August of 1960 in some parts of Pakistan.

32Some part of the decline in real-money balances will be induced by the very rise in prices *(see* Section IV); but the probable extent of the decline strongly suggests a shift in the schedule as well.

clear that the controls of the 1960's may be sufficiently different, in kind and in extent, that the experience of the 1950's may be inapplicable in the future.

4. The final hesitation before prediction must be to ascertain that the appropriate variable is being predicted. In the present case, it is not so simple as it may seem. Presumably the purpose of our work is to find the increase in nominal money supply which the public would hold without bidding up prices when real income rises by a certain amount; in other words, we would like to predict change of money supply, given price change (zero) and real-income change (20 per cent by the Plan).

But is this the way the Pakistan economy works? Does the public bid up and down prices to adjust the exogenously determined nominal money supply to their desired real holding? Traditional economic thinking cries out "yes", but one is often tempted to think the actual process here is quite the reverse: price levels are determined by largely exogenous factors (*e.g.*, government controls, politically and sociologically determined wages, crop success, *etc.*) and the public later expands or contracts its nominal money balances to its desired real balances[33]. This is not as absurd at second glance as it seems at first—certainly no one would claim that the government or the State Bank has *determined completely* (or perhaps even primarily) the size of the nation's nominal money supply.

Without making an issue of this reversal of traditional causation, it is sufficient here to stress that there are other things that affect general price levels in Pakistan than the public's desired real balances[34], and that the public is an important partner in the determination of the size of the money supply.

This means that, to ensure stable price levels, one must look at much more than the desired real-money-balance schedule. Even if we *knew* that (say) Equation (14') were absolutely accurate and that real income would rise 20 per cent over the Second Plan, one could not safely fix the appropriate money-supply expansion. Prices might move despite an (initially) appropriate money-supply expansion, and/or the money supply might move contrary to our intentions.

In an Alice-in-Wonderland world where the tail wags the dog, one must not doggedly expect that the law of gravity will keep the dog's feet on the ground.

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[33]Initially, a price rise (fall) is made feasible by a fall (rise) in the real-money-balance schedule

[34]Of course, any change in price levels may be considered as a shift in the desired real-money balances, but this avoids the issue of causation.

VI. MONEY DURING THE SECOND PLAN

In order to put the preceding conclusion into the context of the next five years, it is interesting to consider two extreme positions. First, let us naively accept the estimates of Section III, and second, concern ourselves only with the fears expressed in Section V.

Equation (14') suggests that the public's desire for real-money balances will rise by about one-half (.49) of any increase in real income[35]. This estimate was seen, in Section III, to be consistent with our *a priori* predilections — it might imply, for example, that the marginal propensity to hold wealth in money form for precautionary purposes (a_2) be .05 and that the transactions income velocity of money (i/aj) be 5.0. And such values certainly do not violate our historical sensitivity.

But the implications of Equation (14') for the Second Fivc-Year Plan arc astonishing. If real national income per annum rises, as anticipated by the Plan, by about 4400 million rupees[36], then desired real-money balances should increase by some 2200 million rupees. Translating this into nominal terms on the assumption of stable prices (at the 1959/60 level[37]), this means that the money supply may expand by about 2,700 million rupees[38] without inducing the public to lower its real balances by driving up prices. This is cin absurdly high estimate ——

few, if any, economists familiar with the Pakistan economy in 1961 would suggest that such a money expansion is consistent with price stability.

The warnings of Section V are not to be neglected. In fact, careful heed of these warnings may lead to quite pessimistic views on the feasible expansion of the money supply. If one considers only the facts of price decontrol, import liberalization, present rapid rise in prices (in the near absence of deficit finance and the currently small rate of increase of the money supply[39], and the great shock provided by the population census (which indicated that real per capita income has perhaps failed to grow during the 1950's), then it is not difficult to understand, if not to agree with, those disillusioned economists who cry out for a cessation of deficits and monetary expansion.

35This means also, of course, that the public's desire for *nominal* money balances will increase by about one-half of any rise in current-price national income (prices unchanged).

36Approximately one-fifth of the 1959/60 real-national income.

37This assumption has already been proven wrong, but this does not affect the present argument.

38Approximately 1.23 times the real-money expansion (1.23 being the price level in 1959/60).

39Income velocity rose by about 10 per cent in 1959/60 (*see* Appendix) and is probably rising further at present.

The Second Plan itself weaves a twisting path through these two extreme views. It sees the generally downward movement of income velocity during the 1950's as part of an expected trend in the development of an economy, but it also notes the recent interruption of this trend. It considers such short-run problems as the possibility of excess liquidity in the economy ("though its extent is probably not great" [6, p. 61]) and the decontrol of foodgrains. The final recommendation that the money supply may be augmented, over 1960-65, by 1400 million rupees is about half-way between the extremes of 2700 and zero, mentioned above[40]. All in all, it is an appealing compromise, sensibly and knowledgably argued in the Plan document.

But it misses the point. It implicitly assumes, if it is to have any meaning, that somewhere, someone stands ready to ensure that the money supply grows by no more than 1400 million rupees. Moreover, it assumes that the price level is determined, in some predictable and stable way, by the money supply. The first assumption is, and probably will continue to be, factually inaccurate; and the second assumption is, as we have seen, at best tenuous. This latter uncertainty is recognized and hedged at some length [6, Pp. 63-68], but it begs the question—either the money-supply expansion is relevant, or it is not. And if it is relevant, it is either controllable, or it is not. I am afraid the negative applies to both questions.

In short, the only interpretation of the Plan's discussion of money [6, Pp. 57-63] is: if inflation does not occur, the public will probably increase its holdings of money by about 1400 million rupees, though the figure is very uncertain.

The recent revisions of the Plan, only now becoming public, seem to be infinitely more sensible about the chain of causation. The primary defence against inflation is now seen as the PL-480 foodstuff stockpiles; by releasing these at varying rates, both the secular and the crop-failure pressures on cereal prices may be avoided. The money supply is relegated to its appropriate position as a not-very-important endogenous variable.

This new emphasis, if not new approach, not only is the only practical solution but also has theoretical justification. The Keynesian analysis uses the concept of aggregate demand (Y^d in Figure 7) in relation to aggregate supply (or national income; Y^S in Figure 7). If aggregate demand follows the schedule Y^d_1, and full-capacity national output is OE, then there is no impulse to higher prices. If, however, full-capacity output is only OA, an "inflationary gap" of BC appears; if it is not removed by appropriate fiscal

[40]By coincidence (probably), the Plan estimate of the safe increase in the money supply is almost exactly that found by Extrapolating Equation (32), (*see* Figure 5).

and monetary measures (*i.e.*, aggregate demand reduced to Y_2^d), then prices will rise, at least by AE/OA per cent (if equilibrium is to be achieved) and by more if the economy lacks money illusion or wage lags.

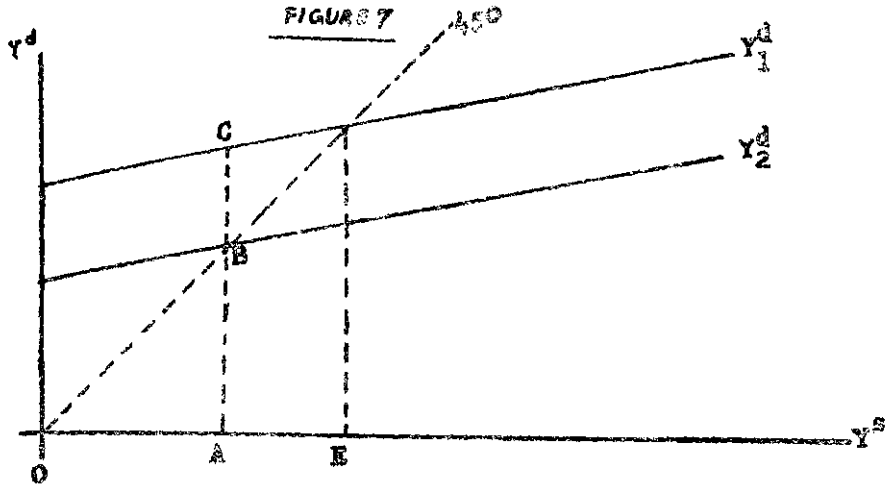

Figure 7

The income-velocity approach hypothesizes that variations in the public's real-money balances will affect the aggregate demand functions[41]. Y_1^d will apply with one real-money supply; a lower real-money supply will induce greater saving propensities and hence will correspond to, say, y_2^d. Thus, if the inflationary gap (BC) exists, either prices must rise by x per cent or the money supply be reduced by x per cent — in either case, the real-money balances are driven down, removing the gap.

Both of these approaches require knowledge about functional relations. The Planning Commission's new approach does not—rather it recognizes that full-capacity output (maximum real Y^s) is a variable. With large PL-480 supplies available, the situation is identical with one where the maximum real-national income of a nation is a controllable quantity. Thus, if aggregate demand is at Y_1^d and present supplies of output at OA, prices will begin to rise; but the injection of AE of foodstuffs will stop the price movement. The only question is how much is AE, and the answer is simply as much as needed to stop price movements.

While trial-and-error would be adequate, the technique is potentially even more accurate than that, for the one function that is fairly accurately ascertainable in Pakistan is the cereals-needs function. One is often tem-

[41]This is neo-neo-classical approach (*i.e.*, Patinkin's) to the quantity theory.

pted to consider an income velocity of cereals in connection with the big inflationary surges in underdeveloped countries. Successful practice generally precedes theoretical rationalization, and the anti-inflationary food releases may be but another example of this adage. Where Keynesian gap analysis is nearly impossible, fiat controls undesirable, and traditional velocity analysis at best uncertain (and perhaps misleading), this new approach may be the solution to Pakistan's inflation problems—we are now equipped to remove quickly inflationary pressure of any reasonable size.

REFERENCES

1. Cagan, P., "The Monetary Dynamics of Hyper-inflation" in *Studies in the Quantity Theory of Money:*

2. Friedman, M., introductory essay in *Studies in the Quantity Theory of Money.* (Chicago: Chicago University Press, 1956).

3. Keynes, J. M., *General Theory of Employment Interest and Money.* (London: Macmillan, 1951).

4. Pakistan Institute of Development Economics, *A Measure of Inflation in Pakistan, 1951-60.* Monographs in the Economics of Development. (Karachi: PIDE, March 1961).

5. Pakistan, Ministry of Finance, *The Budget, 1960-61: Economic Survey and Statistics.* (Karachi: Manager of Publications).

6. Pakistan, Planning Commission, *The Second Five-Year Plan.* (Karachi: Manager of Publications).

7. Pakistan, State Bank, *Report on Currency and Finance, 1959-60.* (Karachi: State Bank of Pakistan).

8. Patinkin, D., *Money Interest and Prices.* (New York: 1956).

9. Tobin, J., "The Interest-Elasticity of Transactions Demand for Cash", *Review of Economics and Statistics,* August 1956.

10. *Monthly Statistical Bulletin,* issued by the Central Statistical Office of Pakistan.

Appendix

Year	M	P	$\dot{P}$	M_r	Y_r	A_r	k	V
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1949/50 ..	2670.2	.99352	...	2687.6	17,238	10,462	.16	6.4
1950/51 ..	2932.5	.95439	—.3094	3072.6	18,324	10,824	.17	6.0
1951/52 ..	3697.8	1.03913	.0888	3558.6	18,161	10,495	.20	5.1
1952/53 ..	3208.4	1.01295	—.0252	3167.4	18,482	10,945	.17	5.8
1953/54 ..	3544.2	.96054	—.0517	3689.8	19,447	11,663	.19	5.4
1954/55 ..	3803.7	.81805	—1.483	4649.7	19,857	11,630	.23	4.3
1955/56 ..	4369.3	.94324	.1530	4632.2	19,516	11,225	.24	4.2
1956/57 ..	4920.7	1.15437	.2238	4262.7	20,785	12,122	.21	4.9
1957/58 ..	5233.7	1.13193	—.0194	4623.7	20,987	11,954	.22	4.5
1958/59 ..	5502.1	1.13633	.0039	4842.0	20,927	11,735	.23	4.3
1959/60 ..	5761.9	1.22796	.0806	4692.3	21,897	12,477	.21	4.7
1960/61 ..	6170.1*							

Sources:

(1) M = The nominal money supply [7, Table 29, p. 141]. The figures are for December (of 1949 through 1959) and are in millions of rupees. (Dec. 1960 figure (*) preliminary).

(2) P = The national-income deflator implicit in the Pakistan Institute of Development Economics current price national income estimates [4, Section IV]. This price index is converted here to a 1949-53 (=1.00000) base to make it comparable with the real-income base.

(3) $\dot{P}$ = The percentage change of P (column (2)) with the previous year's value being used in the denominator; *i.e.*,

$$\dot{P} = \frac{P - P^{-1}}{P^{-1}}$$

(4) M_r = The nominal money supply deflated by the price index; *i.e.*,

$$M_r = \frac{M}{P}$$

Figures are in millions of rupees.

(5) Y_r = Real-national income, with the prices of 1949-53 [5, Table 1, p. 1 of Statistics Section]. Figures are in millions of rupees.

(6) A_r = The share of real-national income derived from agriculture (major agricultural crops, minor agricultural crops, livestock, fisheries and forestry). Source is same as for Y_r. Figures are in millions of rupees.

(7) k = Real-money balances as a fraction of real-national income; *i.e.*

$$k = \frac{M_r}{Y_r}$$

(8) V = Income velocity of money (inverse of k).

Effectiveness of Bank Rate Instrument in Pakistan

M. Umer Chapra

This chapter originally appeared as an article in the Spring-1962 issue of *The Pakistan Development Review* and is the result of research carried out in 1961 when the author was a Senior Economist at the Pakistan Institute of Development Economics. This paper was a part of his Ph. D. dissertation presented to the University of Minnesota.

The author is indebted to Dr. Harlan Smith and Dr. John Buttrick of the University of Minnesota and Dr. Henry Bruton, Dr. Richard Porter and Mr. S.U. Khan of the Institute for suggestions to give this final shape to the paper. Errors that still remain are the sole responsibility of the author.

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Effectiveness of Bank Rate Instrument in Pakistan

M. Umer Chapra

On January 15, 1959, bank rate was raised in Pakistan from its traditional level of 3 per cent to 4 per cent. This paper examines the effect of this rise of one percentage point in the bank rate on the borrowings of scheduled banks from the State Bank, their reserves, their lending rates, the supply of their credit and the allocation of their credit among various sectors of the economy. This is done by comparing the values of certain relevant variables *primarily* in the year before the bank-rate change (1958) and the year after the bank-rate change (1959). From this examination of a single experience in Pakistan, it is not desired to prove that the bank rate would be effective or ineffective in future. It would, however, be unwise to ignore this bit of historical evidence in the country. The assessment will certainly give some idea of what to expect in future in comparable circumstances.

A rise in bank rate may be effective in curtailing scheduled-bank credit in two different ways. First, it may be an effective way of announcing to both the banks and the public the direction of the State-Bank policy. Scheduled banks may become cautious as a result of this and may, therefore, refuse to lend as much as previously at a given rate of interest. Second, a higher bank rate would make it costlier for scheduled banks to borrow from the State Bank. Scheduled banks may maintain relatively higher reserves after an increase in the bank rate because they know that in the event they have to borrow from the State Bank, it will be at a higher rate. However, bank rate would become a penalty rate only if the scheduled banks do not

have excess reserves, need to borrow from the State Bank and the bank rate exceeds the rate charged by scheduled banks.

Such an increase in the cost of scheduled-bank borrowing might normally lead to an equal increase in market rates of interest unless the demand curve for scheduled-bank loans moves to the left due to some exogenous factors. But if the marginal efficiency of investment is very high, as is generally believed to be the case in certain sectors of the economy of Pakistan (for example, large-scale industries, import and export business and wholesale trade)[1], then a small rise in the bank rate and the market rates of interest may have only a negligible effect on the borrowings of these sectors from the scheduled banks. This paper will, therefore, be mainly concerned with the supply and not the demand side of scheduled-bank credit.

Scheduled-bank borrowings from the State Bank declined by 42.6 million rupees in 1959 from their level in 1958[2]. Was this due to the increase in the bank rate? This decline in scheduled-bank borrowings could also be due to an increase in scheduled-bank reserves which are affected by a number of factors.

Table I shows that the gross reserves of scheduled banks increased in 1959 by a monthly average of 54.3 million rupees. Thus, the reserves of scheduled banks increased by more than the decline in their borrowings. Increase in the bank rate may, therefore, have been only a minor factor in the decline in scheduled-bank borrowings from the State Bank. Borrowings may have gone down because reserves increased due to several factors the contribution of each of which can be seen from Table I.

The increase in the bank rate was followed by a rise in the lending rates of scheduled banks, but the rise came about gradually. The weighted average rate of interest charged by scheduled banks to the private sector rose from 4.21 per cent in December 1958 to 4.96 per cent in June 1959 and to 5.14 per cent in December 1959 [4, p. 3] and June 1960. There was, thus, a gradual rise of just under one percentage point in the lending rates of banks. The State Bank in its annual report for 1958/59 ascribes this rise in the interest rates to the bank rate, saying: "The lead of the State Bank was followed by other institutions and deposit rates and advance rates of commercial banks went up" [3, p. 34].

The main concern of this paper, however, is what happened to bank

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[1] According to the Planning Commission, marginal efficiency of investments is as high as 30 per cent in large-scale industries in Pakistan. No evidence has been given by the Planning Commission for this (*see* [2, p. 77, para 101]).

[2] Based on data from the State Bank *Bulletins*.

TABLE I

FACTORS CHANGING SCHEDULED-BANK RESERVES IN PAKISTAN IN THE YEAR *1959*

(in million rupees)

	4-	–
Increase in currency outside the State Bank"		48.9
Increase in government and other deposits at the State Bank (excluding deposits of scheduled banks)		128.7
Increase in gold, foreign assets and balances held outside Pakistan[6]	2484	
Decrease in government obligations"		8.6
Increase in State-Bank investments in government and foreign securities	18.2	
Decrease in other assets (net of other liabilities)[11]		26.1
Total:	266.6	212.3
Gross increase in reserves (*266.6* — 212.3)	54-3	
Less borrowings from the State Bank	—42.6	
Net increase in scheduled-bank reserves	11.7	

Note: **The table** is **constructed from** *i)* **the balance sheets of both the Issue** and **the Banking** Departments **of the State Bank of Pakistan,** *ii)* **the consolidated position of scheduled banks, and** *iii)* **treasury currency.** Based **on data published in State Bank** *Bulletins.* **Data represent increases or decreases in** annual **averages of** figures **on last Friday of** each **month** in **1959 over those in 1958.**

"**Includes State-Bank notes outstanding and treasury** currency outside the State **Bank.**

^Includes assets **held with the Reserve Bank of** India.

^**includes** domestic assets **held in the** Issue **Department,** government **treasury bills,** provincial **government debtor balances, loans and** advances **to governments, and treasury currency.**

^**Includes loans** and advances other than those to the **scheduled** banks, other assets, *less* **bills** payable and **capital** and **reserves and "other" liabilities.**

credit extended to the private and the government sectors in 1959 relative to 1958. For determining this, it is necessary to have seasonally-adjusted data of scheduled-bank credit to the private and the government sectors during the 12 months of 1958 and 1959. But such data are not published for Pakistan. Therefore, we have constructed our own estimates (Table II and Figure 1). There was a downward trend in scheduled-bank credit to the private sector after October 1958[3]. This trend continued through January 1959, the month after the bank-rate change. Thereafter, the credit to the private sector started to expand and, in December 1959, it was at a rate higher than the peak of 1958. Total credit in 1959 was 4 per cent higher than the total in 1958 (Table III and Figure 2). Though credit increased in 1959, the rate of increase of credit certainly dropped because the average rate of increase of credit during the calendar years from 1954 to 1958 was 12 per cent per annum and it was only 4 per cent in 1959 (Table III).

However, although the rate of increase of bank credit to the private sector declined in 1959 from its previous level, the rate of increase of total scheduled-bank credit to the government as well as the private sector remained 11 per cent, as it was in the previous few years (Table III). This is because the rate of increase of bank credit to the government sector increased from an average of 10 per cent per annum from 1954-58 to 17 per cent in 1959. There was, thus, a shift in scheduled-bank credit from the private sector to the government sector in 1959. Relatively more credit was extended to the government sector and relatively less to the private sector.

Was this shift in credit due to change in the bank rate? The average rate of interest on private loans as stated earlier was 5.14 per cent in 1959. This evidently was higher than the bank rate in that year. The weighted average yield was 3.2 per cent on central government securities and 3.6 per cent on provincial government securities[4]. The yield on government securities was, therefore, lower than the bank rate and the yield to scheduled banks on private loans in 1959. The shift in bank credit was, therefore, not due to the yield on government securities becoming greater than the return to banks on loans to the private sector. It was probably due to reduction in private demand for credit[5]. It may not be wrong to conclude that the bank rate was instrumental, if at all, to a very minor extent in bringing about the decline in the rate of increase of scheduled-bank credit to the private sector.

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[3]In October 1958, martial law was imposed in Pakistan.

[4]Figures based on data from State Bank *Bulletins*.

[5]According to M. Haq and K. Khanam, demand for credit has determined the expansion of bank credit in Pakistan throughout 1951-60 [1, p. 21].

TABLE II

SCHEDULED-BANK CREDIT TO PRIVATE SECTOR AND INVESTMENTS IN GOVERNMENT SECURITIES, 1958 AND 1959

Month	Credit to private sector[a]					Investment in government securities[b]				
	Unadjusted		Seasonal adjustment factor[c]	Seasonally adjusted		Unajdusted		Seasonal adjustment factor[c]	Seasonally adjusted	
	1958	1959		1958	1959	1958	1959		1958	1959
	(.....*in million rupees*.....)									
January	1,382	1,425	110	1,256	1,295	918	1,038	99	927	1,048
February	1,351	1,421	109	1,239	1,304	917	1,031	98	938	1,052
March	1,327	1,423	106	1,252	1,342	929	1,039	98	948	1,060
April	1,273	1,361	100	1,273	1,361	972	1,048	98	1,013	1,092
May	1,235	1,272	96	1,286	1,325	1,007	1,081	96	1,049	1,126
June	1,255	1,333	93	1,349	1,433	981	1,094	97	1,011	1,128
July	1,255	1,370	91	1,379	1,505	959	1,206	103	931	1,171
August	1,992	1,400	93	1,389	1,505	958	1,214	103	930	1,179
September	1,356	1,355	93	1,458	1,457	993	1,202	104	955	1,156
October	1,432	1,367	97	1,476	1,407	1,021	1,194	102	1,001	1,171
November	1,481	1,489	104	1,424	1,432	1,032	1,236	101	1,022	1,224
December	1,489	1,651	108	1,379	1,528	1,016	1,241	103	986	1,205
Average for 12 months	1,344	1,406	100	1,347	1,408	978	1,135	100	976	1,134

[a]Scheduled-bank credit to private sector: unadjusted data are figures on the last Friday on each month obtained from State Bank *Bulletins*; includes advances, bills purchased and discounted, and investments in private securities; seasonally-adjusted figures are obtained on the basis of seasonal adjustment factors explained in footnote c below.

[b]Investments in governments securities: unadjusted data obtained from State Bank *Bulletins*; include investments in both central and provincial government securities.

[c]Seasonal adjustment factors:

(1) Credit to private sector: seasonal adjustment factors were obtained by taking moving averages centred at the seventh month of data from July 1954 to May 1960. This gave moving average for five years from January 1955 to December 1959. Ratios of moving averages to original values were obtained for the respective months. A simple average was then obtained of the different ratios for the same month. These averages were, thereafter, adjusted for level so as to obtain a total of 1,200 for the 12 months. These adjusted averages are the seasonal adjustment factors as given in the Table.

(2) Investments in government securities: same procedure was adopted but the moving averages were obtained for the period between July 1954 and May 1958, thus giving averages for only three years. Smaller number of years was taken in this case because the seasonl fluctuations were not very wide.

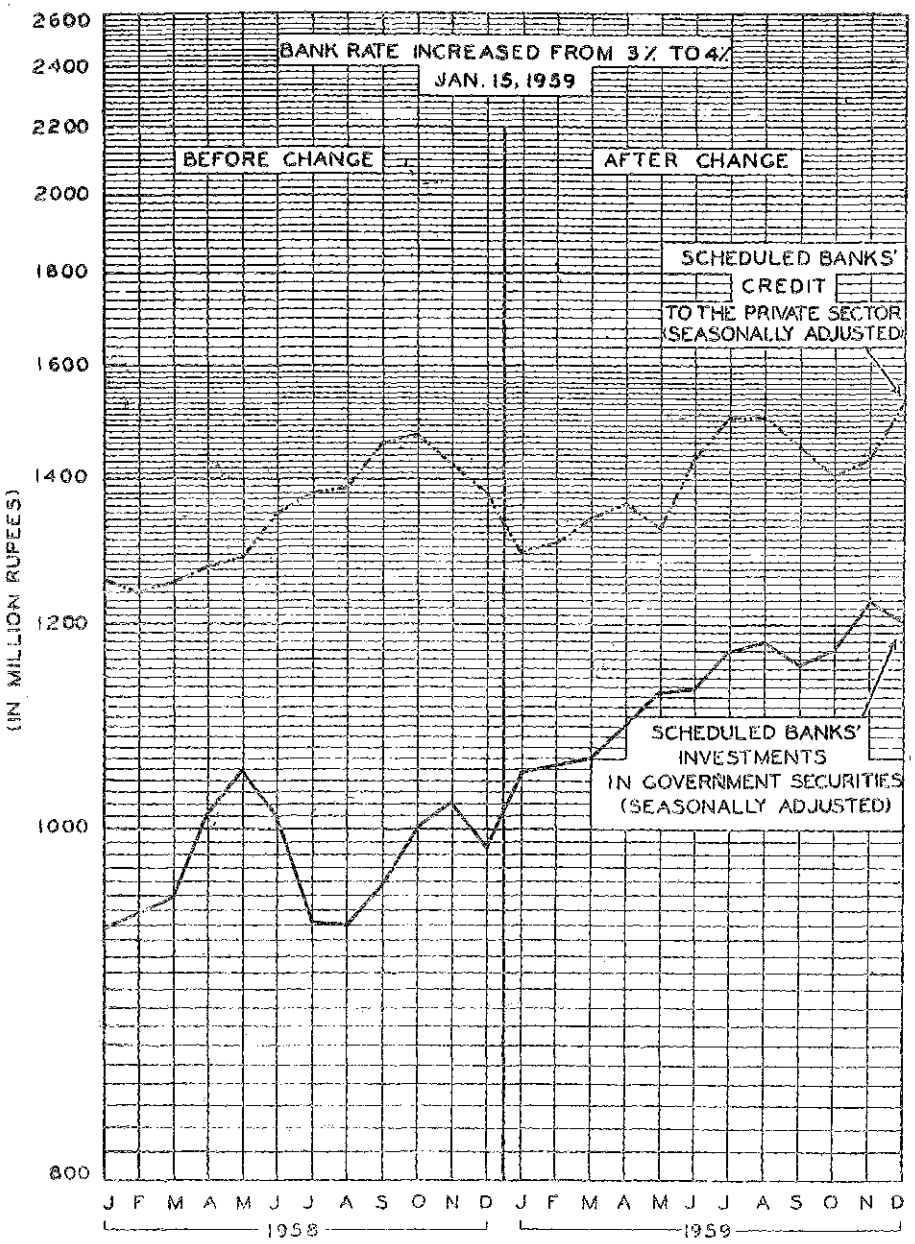

Figure 1. Seasonally Adjusted Series of Scheduled Bank's Credit to the Private Sector and Investments in Government Securities, 1958 & 1959

Source : Based on Table II.

TABLE III

SCHEDULED-BANK CREDIT TO PRIVATE SECTOR AND INVESTMENTS IN GOVERNMENT SECURITIES[a], 1954-60

(Averages of 12 months of the calendar year)

Year	Credit to private sector (C)	Index of (C)	Rate of change of (C)	Investments in government securities (I)	Index of (I)	Rate of change of (I)	(C+I)	Index of (C+I)	Rate of change of (C+I)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	(million rupees)			*(million rupees)*					
1954 ..	856	100	—	662	100	—	1,518	100	—
1955 ..	994	116	16	737	11	11	1,731	114	11
1956 ..	1,087	127	9	800	121	9	1,887	124	11
1957 ..	1,197	140	10	859	130	7	2,056	135	11
1958 ..	1,344	157	12	975	147	13	2,319	153	11
1959 ..	1,406	164	4	1,135	172	17	2,541	167	11
1960 ..	1,791	209	27	1,063	161	—6	2,954	188	12

[a]Includes both provincial and central government securities.

Source : Data for (C) and (I) obtained from State Bank *Bulletins*.

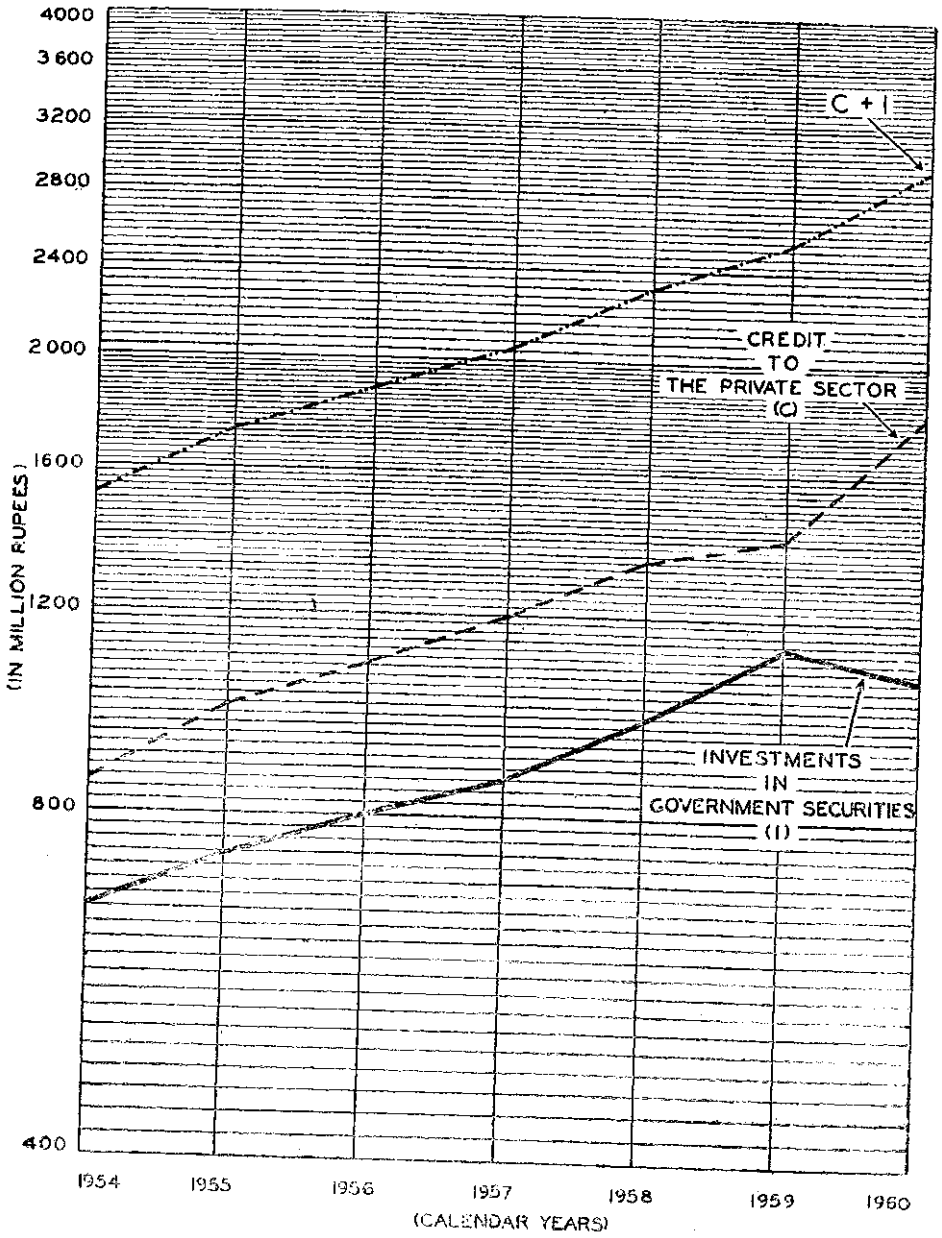

Figure 2. Scheduled Bank's Credit to Private Sector and Investment in Government Securities, 1954-60

Source : Based on Table III

This decline in private demand for credit also explains why the scheduled banks had positive free reserves[6] in 1959 against their tradition of nagative free reserves (Table IV). In 1959, scheduled banks had positive free reserves to the extent of .07 per cent of their demand-and-time liabilities subject to reserve requirements against average negative free reserves of 1.3 per cent from 1954 through 1958. In 1959, it was not profitable for banks to borrow from the State Bank and invest in government securities because the weighted average yield on government securities was lower than the bank rate. As stated earlier, the weighted average yield was 3.2 per cent on central government securities and 3.6 per cent on provincial government securities. The yield on private loans was certainly greater than the bank rate, as mentioned earlier, and the banks could have profited by lending more to the private sector on the basis of their positive free reserves and also by borrowing more from the State Bank. But the demand for credit by the private sector had declined, as shown above. Another evidence for the decline in private demand for credit is that the rates ofscheduled-bank lending to the private sector did not rise fast enough in response to the increase in the bank rate. The weighted average rate of scheduled-bank lending to the private sector, as stated earlier, was 4.21 per cent on December 30, 1958,

TABLE IV

FREE RESERVES OF SCHEDULED BANKS IN PAKISTAN, 1954-60

Year	Excess reserves	Borrowings from SBP	Free reserves	Total demand-and-time liabilities	Col. (4) as % of Col. (S)
(1)	(2)	(3)	(4)	(5)	(6)
1954	42.1	51.0	— 8.9	1,704.0	- 0 . 5
1955	54-9	76.7	—21.8	1,894.6	—1.2
1956	75-2	94.9	—19.7	2,098.3	—0.9
1957	45-6	HI.5	—65.9	2,289.9	—3.0
1958	72.5	100.1	—27.6	2,584.9	—x.1
1959	78.0	57-S	+ 20.5	2,803.1	+ 0 . 7
1960	36.7	122.4	- 85 . 7	3,214-9	—-2.6

Note: **Columns (2), (3), (4) and (5) are in million rupees and are annual averages of figures on last Friday of every month.**

Earlier years have been omitted because data for Column (3) are not available.

Source: **Based on data from State Bank** *Bulletins.*

6Free reserves=excess reserves scheduled banks *minus* **their borrowings from the State Bank.**

but rose only to 4.96 per cent on June 30,1959 and to 5.14 per cent on December 31, 1959. The scheduled banks were, therefore, constrained to have positive free reserves.

The year 1960 presents an entirely different picture from that in 1959. Inspite of the higher bank rate in 1960, the banks had negative free reserves. Their negative free reserves in 1960 were 2.6 per cent of their demand-and-time liabilities subject to reserve requirements (Table IV). In other words, their free reserves in 1960 were lower than in any previous year. Bank credit to the private sector increased at the rate of 27 per cent in 1960 and scheduled-bank holdings of government securities declined by 6 per cent. Total bank credit increased at the rate of 12 per cent, *i.e.,* 1 percentage point higher than in any previous year. If the bank rate were effective, it should have suppressed the rate of expansion of bank credit to the private sector even in 1960. But when private demand for credit recovered, the scheduled banks lent to the private sector much more and reduced their investments in government securities. In 1959, there was a shift to government securities in the portfolios of scheduled banks but in 1960 there was a shift back to the private sector.

The question that may now be asked is that if the higher bank rate did not reduce the rate of expansion of bank credit, did it change its allocation among different sectors of the economy.

Table V gives the percentage distribution of scheduled-bank advances between various sectors of the economy. In 1958, there was a significant change in the allocation of bank credit to many sectors. But in 1959 (the year after the bank-rate change), there seems to be no significant change over 1958 except for the trend evident after 1955.

The share of commerce declined by about 4 percentage points in 1959. But there has been a declining trend in the share of commerce after 1955. Its share declined by an even greater magnitude in 1958 (by 12 per cent). The share of "services" seems to have increased significantly in 1959 (about 54 per cent of its 1958 level). But it increased significantly even in 1958 (by about 53 per cent of its level in 1957). Thus, if there is a change in the share of any sector after the bank-rate change, it seems less likely to be due to the increase in the bank rate and more likely to be due to factors already in operation before 1959.

We find that the borrowings of scheduled banks from the State Bank did decline but less than the increase in their reserves after the bank-rate change. The rate of interest charged by the scheduled banks on their loans to the public increased but gradually and slightly less than the increase in

Year	Agriculture, forestry, hunting and fishing	Mining and quarrying	Manufacturing	Construction	Electricity, gas, water and sanitary services	Commerce	Transport, storage and communications	Services	Others	Total
	w	s			Cv"			∞		(ιo)

bank rate. The rate of increase of scheduled-bank credit to the private sector dropped in 1959 after the increase in bank rate. This seems to be due less to the decrease in the supply of credit and more to a decrease in the demand-for credit. In 1960, inspite of the higher bank rate, bank credit to the private sector expanded significantly. The rate of increase of scheduled bank investments in government securities was significantly higher in 1959 compared to the average of the previous five years even when the average yield on government securities was less than the bank rate in 1959. In 1960, scheduled-bank holdings of government securities declined. Rate of expansion of total bank credit to both the private and the government sectors did not decline in 1959 and rose a little in 1960. We may, therefore, conclude that the bank rate was not effective in bringing about the desired results.

In view of this one performance of the bank-rate instrument in Pakistan, can something be said about how effective the bank-rate instrument may be in future as an instrument of credit control in the country? An attempt is made to lay down some conditions under which it may be effective.

A rise in the bank rate may be effective if *a*) price of government securities is allowed to fall to prevent banks from selling their securities to the State Bank in order to expand credit to the private sector offering a higher yield, *b*) new issues of government securities offer a higher rate of interest to make government securities attractive for scheduled banks.

A capital loss on securities may discourage scheduled banks from unloading their securities portfolio at the State Bank in order to expand loans to the private sector. It has been shown earlier than in 1960 the scheduled banks did decrease their holdings of government securities by 6 per cent[7] and expanded their credit to the private sector by 27 per cent partly because price of securities was pegged and yield on loans to the private sector was higher. But if the price of government securities is not pegged, they lose their attractiveness as liquid assets. Scheduled banks may then not be willing to subscribe to new issues of government loans, because of fear of capital loss in view of the increasing demand for credit and gradually rising rates of interest for preventing inflation. In such a circumstance, the government will be constrained to sell new issues to the State Bank. This will be relatively more inflationary than selling securities to the scheduled banks.

With a rise in market rates of interest due to a higher bank rate, the

[7]Some of these securities may have been sold to the State Bank while others may have matured. However, if some securities matured, it shows that the banks did not go for other issues with the proceeds, because the yield on government securities was not sufficiently attractive compared to the yield on private loans.

government will have to raise the rate of interest on new issues of government securities to make these attractive to the scheduled banks[8]. If this is not done, private credit will be more attractive for banks because of a higher yield and also because of possibilities of capital loss on government securities in the event their price is allowed to fall. If the rate of interest is raised on government securities the interest burden of new public debt will rise and, therefore, the cost of governments' contribution to capital formation will also increase.

8In Pakistan, the central and the provincial Governments did raise the rate of interests to 4 and 4,50 per cent respectively on new issues after the rise in the bank rate.

REFERENCES

1. Haq, M. and K. Khanam, *Deficit Financing in Pakistan,* 1951-60. (Karachi: Pakistan Institute of Development Economics, 1961).

2. Pakistan, Planning Commission, *Second Five-Year Plan,* 1960-65. (Karachi: Manager of Publications, 1960).

3. Pakistan, State Bank, *Annual Report,* 1958-59. (Karachi: State Bank of Pakistan, September 1959).

4. Porter, Richard C., *Monetary Policy in the Economic Development of Pakistan.* Mimeographed paper read at the Businessmen's Seminar. Lahore, November 1961.

The Dangers of Monetary Policy in Agrarian Economies

Richard C. Porter

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The central banks of underdeveloped economies are frequently admonished for their apparently permissive attitude towards inflation. Where large government deficits are financed by the creation of ever-larger money balances in the economy, this criticism is quite apt. But the strictures often extend to those central banks which, in a situation where prices have *already* risen for reasons beyond their control[1], are reluctant to refuse the accommodating expansion of the money supply. With the argument that the central bank *can* force prices back to their previous levels merely by insisting that the money supply does not increase, central bankers and their supporters have seldom disagreed. They justify permissive after-the-fact monetary expansions on the grounds that driving the price level back down would have unfortunate side effects[2].

1For example, as a result of crop failures a rise in urban wages, or an unexpected shift in the terms of trade.

2As, for example, inequities or temporary idle capacity.

The purpose of this paper is to show that in agrarian (or predominately agricultural) economies it may be *impossible* to counteract apparently temporary shifts in the price level by means of traditional monetary policy. A permanently higher price level may be easily maintainable even if no increase in the money supply occurs. The desired real-wealth holdings of the agricultural sectors, made inadequate by the rise of prices, may be restored by increasesi n nonmoney wealth holdings. Thus, the traditional mechanism by which inadequate real-money balances lead to a decline in the price level [4] may be absent in underdeveloped economies where a significant portion of the populace has ready access to an alternative form of liquid wealth—unsold, unconsumed, self-produced foodgrains.

As a result, an increased price level can be maintained *whether or not* the central bank expands the money supply. But the two policies (to expand or not) are not the same in their other economic effects. If the money supply is kept constant, foodgrains will be held back from consumption until real-wealth balances are restored. In countries where the standard of living is already low, such monetary restriction would impose an unnecessary, though temporary, burden upon the people. Furthermore, it will lead to redistribution of real income in the economy which may be quite undesirable.

In an economy where food is already a critically scarce commodity, the central bank would be foolish indeed to encourage its hoarding as wealth when some inedible substitute (*i.e.*, money) can easily be made available. Moreover, if traditional central-bank policies are ever to be effective in such an economy, monetization (not only of transactions but) of wealth holdings must be stimulated. This cannot be achieved if increased money is not provided when increased wealth balances are desired.

In the remainder of this paper, these assertions are proved, though under very simplified conditions. Throughout, a rather rudimentary "agrarian" economy[3] is considered where the only production is of foodgrains and the nonagricultural population is supported by transfers from the agricultural producers. Of course, there is no necessity that the amount of money transferred from agriculturalists be equal to the amount transferred to the nonagricultural sector, for the government might print (or withdraw) currency; since we are concerned with the compatibility of an unchanged money supply with a changed price level, we shall assume a balanced and unaltered government budget[4].

We shall look at two types of economies, the more "modern" type

[3]Of the type analysed, in a different context, by Georgescu-Roegen [3].

[4]This budget consists entirely of the transfers mentioned.

first. In Section II, it is assumed that *all* wealth balances, in each of the two sectors, are held in the form of money—foodgrains are never hoarded. It will be shown that traditional monetary policy is effective[5]. In Section III, the assumption that agriculturalists hold some portion of their real-wealth balances in the form of hoarded foodgrains is introduced. Monetary policy is shown to be uncertain, if not totally ineffective, under these conditions.

II

In this agrarian economy, there are only two types of people who may be conveniently huddled together and prosaically labelled agriculturalists and nonagriculturalists. The agricultural sector produces foodgrains in an amount that may vary as a result of such factors as the caprice of nature but that is unaffected by economic considerations. The government levies an unchanging lump-sum tax in money terms upon this sector[6]. This tax is transferred by that government entirely to the nonagricultural sector whose members produce nothing[7]. Thus, the real income of the agriculturalists is their foodgrains production less the real value of their taxes *(i.e.,* the money value of the taxes divided by the price of foodgrains), and the real income of the nonagriculturalists is this real value of the taxes upon the agricultural sector.

The government has incurred budget deficits at some time in the past, for there is a stock of money in the economy, divided between the two sectors and being the entire wealth of these sectors[8]. Foodgrain consumption and real-wealth holding are the only economic goods in this economy; hence, for each sector we can visualize a demand curve for foodgrains which depends upon real income and real wealth of that sector[9]. An increase in either real income or real wealth of a sector will increase its demand for foodgrain consumption

5By "effective" is meant merely that 1) for any money supply only one price-level equilibrium can be maintained by the economy, and 2) the larger the money supply the higher is that price level. Implicit is the third assumption that the equilibrium is stable and that the effects of disequilibrating shocks disappear rapidly.

6None of the conclusions would be altered if the tax were fixed in real terms, *i.e.,* so much foodgrains rather than so many units of currency.

7Except perhaps "social goods". This sector comprises all landlords, civil servants, police, priests, magistrates, soldiers, *etc.*

8There is *no* national wealth; in the strict sense, this money is merely internal debt. That it is generally, though illusorily, considered unencumbered wealth is well known.

9There is also a demand curve for real wealth which depends upon real income and foodgrain consumption. This we neglect because, by the budget constraint, whatever real income is not devoted to foodgrain consumption must become demand for augmented real-wealth balances (and any excess of consumption over real income is demand for diminished real balances).

10The marginal propensity to consume (foodgrains) out of real income will be less than unity. In the present context, this follows from the fact that real wealth is assumed not to be an inferior good. An increase in real income increases both desired consumption flows and desired wealth balances; this latter rise can be achieved only by saving and, hence, consumption must rise by less than the increase in real income.

We will assume that this economy is initially in equilibrium in the sense that there is no tendency for any of the economic variables to change (given the unchanging flow of foodgrain output, tax and transfer payments, and money supply). But, before proceeding, we must examine more closely the nature of this equilibrium. Most essential is that there is *no saving* (or dissaving) in either sector for that would imply a change in wealth balances. Thus, each sector, accepting the price level as given, adjusts its money holdings so as to achieve a balance between consumption and wealth. If the total real value of money balances which the two sectors together desire is less than the real value actually available (at the existing prices), one (or both) of the sectors will try to rid itself of the excess by increasing its consumption; excess demand for foodgrains is generated and prices rise, bringing down the real value of the money supply until it equals the real value desired. A reversed chain of events (lowering prices) will occur if the two sectors together demand greater real-money balances than are available at existing price levels. Thus, the requirement in equilibrium of zero saving in each sector implies a unique distribution of money balances and price level, given the exogenous variables, foodgrains production, taxes, and total money supply[11].

Let us now see the results of a suddenly reduced output of foodgrains. The nonagricultural sector is initially unaffected, having the same real income (taxes do not vary) and real wealth; hence, its demand for foodgrains is not altered. The agriculturists' real wealth is unaffected by the crop failure, but their real income declines, grain for grain, with their production. They will retrench their consumption (for their marginal propensity to consume is positive) but their own demand for self-produced foodgrains will not be reduced as much as their output (for their marginal propensity to consume is less than one). The amount of foodgrains supplied to the nonagricultural sector will be smaller while the demand from that sector is unchanged—hence prices will be bid up.

Were this reduced production to continue, a new equilibrium would eventually be achieved. The price level would be higher and the real income of the nonagricultural sector lower (for taxes are unchanged). There might also be changes in agriculturists' real after-tax income or their nominal money balances[12]. For every configuration of the three exogenous variables (foodgrain output, tax level and money supply), there is a unique equilibrium level of prices and share of money balances in each sector. This new equilibrium would, in time, be attained.

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[11]Technically, there are two equations to determine two variables (*see* the Mathematical Appendix).

[12]*See* Mathematical Appendix.

More interesting, however, is the behaviour of the economy if foodgrain production returned to normal after a year of crop failure. Provided that the tax levels and the money supply were unchanged, the previous equilibrium would eventually reassert itself. Prices which had risen in the year of crop failure would necessarily fall again. The movement towards the higher-price equilibrium which was relevant to the reduced food output would be halted by the reappearance of normal crops and the economy would begin to return to its previous equilibrium.

Monetary policy is, in such an economy, effective in the sense that an unchanged money supply is necessary and sufficient to ensure that temporary rises of prices are ultimately reversed (if the government budget remains unchanged throughout and food production returns to "normal"). If the money supply is permitted to expand, however, a higher level of prices will be permanently tenable.

There is nothing new in all this; it is traditional monetary theory in a somewhat untraditional guise. The results completely conform to our expectations. But this exercise is not without value, for it will be seen in the next section that this same economy will function in vastly different fashion if one small alteration (in the direction of realism) is made in its structure.

III

In this section, it is assumed that some part of the agricultural sector's real-wealth balances consists of hoarded foodgrains, the rest being real-money holdings[13]. Otherwise, the economy is assumed to be identical to that discussed in the previous section[14].

The difficult question that immediately arises with the introduction of a second kind of wealth is what determines the portion of total wealth kept in each form in the agricultural sector. It is especially difficult because there is no economic difference between the two forms[15]. In fact, not only is little

[13]Alternatively, we could assume that foodgrain balances comprise part of the nonagricultural sector's wealth balances. In countries where much rural wealth is owned by noncultivators (*i.e.*, landlords, money-lenders, *etc.*), we must recognize that the nonagricultural sector (as here defined) is likely also to hold foodgrain balances. The conclusions of this section are not fundamentally affected by the choice of the sector which is assumed to hoard foodgrains.

[14]More accurately, identical consumption schedules, foodgrain output, tax and transfer rates and money supply are assumed. The equilibrium price level will clearly be higher since the total real-wealth balances of the economy are larger by the amount of hoarded foodgrains. In the effort to achieve an optimal relation between consumption and real wealth, the two sectors will bid up the price level until the total real-wealth balances are the same in equilibrium as in the equilibrium of the previous section (*see* the Mathematical Appendix).

[15]Unless an expectation of price changes exists, in which case all wealth would be held as money if price falls were expected and all as foodgrains if rises were expected. We assume no conscious speculation along these lines.

known about the size of rural foodgrain wealth holdings in predominately agricultural economies, but almost nothing is known about what causes changes (and by how much) in the relative proportions of foodgrain stocks and money in rural-wealth balances. Since this ignorance can only be dispelled by empirical work, we will approach it warily; we assume that a certain fraction of wealth is kept in foodstocks, for reasons unknown, and we will introduce assumptions about changes in this fraction as necessary.

Let us begin in equilibrium, as in Section II, and analyse the effects of a short-lived decline in foodgrain output. Initially demand by the nonagricultural sector for foodgrains is unaltered since neither its real income nor its real wealth is affected. The real income of agriculturalists does fall, however, and so also their self-consumption (this latter by less). This decline in marketed food, together with an initially unchanged nonagricultural demand, will drive prices up. The process is completely identical to that described in Section II.

What happens if foodgrain output later returns to its previous higher level? The analysis of Section II showed that, with money and taxes unchanged, efforts to restore the desired higher real-money balances would bid prices down to their earlier equilibrium. Will that still be the case? It certainly *could* be—the same levels of foodgrain stocks and real-money balances might be re-established, and concomitantly the same price level as previously coexisted with that foodgrain output. But there is a second possibility: the agricultural sector may restore its real-wealth balances merely by stockpiling its self-produced foodgrains. Farmers may just as easily reattain their earlier real-wealth position in this fashion, though it will mean that a larger proportion of their wealth will now be in foodgrains.

It may not seem reasonable at first glance that farmers should desire a different composition of wealth now than they did in exactly the same situation earlier (*i.e.*, before their output fell). But the situation is *not* exactly the same. Earlier they *held* a certain composition of money and foodgrains; now they must *re-establish* that composition and must *push down* the price of their merchandise to do it. Of course, the farmers do not know beforehand that they will drive down prices, but they will notice that prices are falling as soon as they try. It is very likely that they will then cease to market such large amounts and will become satisfied with holding a larger fraction of foodgrain wealth.

The rural sectors of underdeveloped economies generally become ever more monetized as time passes and growth occurs not only in their transactions but also in their willingness to hold money as wealth. Thus, the fraction of total real wealth that is held in the form of foodgrain stocks

declines chronologically in the agricultural sector. Slowly but inevitably the monetization of rural wealth proceeds. This process cannot be hurried—if a government pushes too much money into the economy, relying on a *rapidly* increased rural willingness to substitute money for other wealth forms, it will learn from the ensuing inflation that this process of monetization cannot be hastily accelerated.

This process may not be forced, but it may be at least temporarily reversed. Farmers may always be willing, if circumstances warrant, to hold a *smaller* fraction of their wealth as money. The inexorable monetization of the countryside cannot be halted but it can be temporarily retarded. When a farmer has only recently begun to hold as large a portion of his wealth in money as he presently does, the desire cannot yet be too deeply implanted; and if, to restore that portion in money, he must sell his crop at declining prices, he may quite readily "regress" to a larger fraction of foodgrain wealth.

If this in fact occurs, the implications for monetary policy are enormous. Its entire basis disappears once the farmer is able and willing to produce a money substitute. Consider now the price implications of a temporary crop failure. When foodgrain production falls, prices rise; when production recovers, the real-wealth balances of the agricultural sector become inadequate. But the farmer merely stockpiles foodgrains until his wealth holdings are adequate. As long as the price level does not fall, the real-wealth balances of the nonagricultural sector are adequate, since the recovery of foodgrain production does not affect its real income (unless prices fall).

There are, therefore, two extreme possibilities concerning prices when foodgrain output recovers from a temporary fall (always assuming unchanged tax-and-transfers and money supply). The first is that there will be no change in rural foodgrain hoards and prices will decline to their previous level (as in Section II, when no foodgrain hoards were held). The second is that any inadequacy of rural real-wealth balances will be entirely satisfied by accumulation of foodgrain hoards with no decline at all in prices. There is a strong likelihood that reality will be more closely described by the latter.

If the government persists in its belief that the rise in foodgrain prices is temporary, since it was occasioned by a temporary fall in output, its error will only gradually become apparent. For prices will not decline. While pursued, however, a policy of "monetary restriction" *(i.e.,* no change in taxes or money supply) will have two serious effects upon the economy:

1) Foodgrains will be diverted from consumption to hoards.

2) The standard of living of the nonagricultural sector is lowered, relative to the agricultural sector (since its money income, the transfer, is unchanged in the face of higher prices).

Monetary authorities need not accept this conclusion of the crop failure and "temporary" price rise. If, instead, they accept the price rise as inevitable and increase proportionately (to the price rise) the money supply and the tax level, neither of the two effects cited above, will occur. It will be possible for farmers to replenish their money wealth *without* forcing down prices, and there is no reason why they should not be willing to do so. None of the real variables of the system (*i.e.*, consumption, real income, *etc.*) is changed, and this is a much more sensible goal than that *some* of the monetary variables (*i.e.*, money supply, taxes, and nonagricultural money income) remain unchanged.

IV

While the economies described in Sections II and III are nowhere to be found in this world, the lesson they offer is quite applicable. Certainly, if one accepts that farmers will react as suggested in Section III, the efficacy of monetary restriction to reverse "temporary" price rises is in doubt.

If the price level cannot be driven back down, it may be advisable to accept the rise and to ensure that the real variables of the system are not altered (or reduced). This requires money-supply expansion and higher government budgets.

To blame the price rise on the larger money supply in this situation would be seriously to err, chronologically as well as causatively — *ante hoc, ergo propter hoc*. The higher price level can, and will, maintain itself whether or not the money supply is expanded. If the government is to keep the price level from permanently rising, it must take action to prevent temporary declines in foodgrain production. Once crops fail, a permanent price increase may be inevitable.

The application of monetary restriction in such situations may be both liable to failure and retarding of the long-run objective of the central bank to achieve rapid and efficient monetization of the rural economy This latter purpose may be far more important in underdeveloped economies; it is essential to create the kind of economy where traditional policy techniques can succeed before employing these techniques. First "to maturity must crawl that child in whom the old equations are reversed for that is cause which was effect before".

Mathematical Appendix

The following symbols will be used in this appendix:

C = consumption of foodgrains

M = money supply

T = tax on agricultural sector (equals transfer to nonagricultural sector)

p = price of foodgrains

X = production of foodgrains

S = stockpiles of foodgrains (assumed zero in Section II).

Subscript A means that the variable refers to the agricultural sector, subscript B to the nonagricultural sector. A dot over a variable (*e.g.*, $\dot{M}_A$) refers to the rate of change of the variable at a moment of time.

TO SECTION II

Consumption in each sector is assumed a function of its real-income and real-wealth (money) balances. Hence,

$$C_A = A\left[X - \frac{T}{p}, \frac{M_A}{p}\right] \quad \ldots\ldots (1)$$

$$C_B = B\left[\frac{T}{p}, \frac{M_B}{p}\right] \quad \ldots\ldots (2)$$

where A and B represent functions. Recalling that the total money supply is given and constant, we have

$$M_B = M - M_A \quad \ldots\ldots (3)$$

and

$$\dot{M}_B = -\dot{M}_A \quad \ldots\ldots (4)$$

Let us assume, for simplicity, that the consumption functions may be approximated (in relevant ranges) by linear relations:

$$C_A = a_0 + a_1\left(X - \frac{T}{p}\right) + a_2 \frac{M_A}{p} \quad \ldots\ldots(5)$$

$$C_B = b_0 + b_1 \frac{T}{p} + b_2\left(M - \frac{M_A}{p}\right) \quad \ldots\ldots(6)$$

where the parameters are within the following ranges:

$$a_0, b_0 \geq 0 \; ; \; 0 < a_1, b_1 < 1 ; \text{ and } a_2, b_2 > 0.$$

Finally, at all times, the total consumption of the two sectors must be equal to foodgrain output (since, for the present, none may be hoarded):

$$X = C_A + C_B \quad \ldots\ldots(7)$$

and the difference between what the agricultural sector receives from sales and what it is taxed is the net addition to its money balances[1]:

$$\dot{M}_A = pC_B - T \quad \ldots\ldots(8)$$

Substitution of (7) and (8) into (5) and (6) permits the elimination of C_A and C_B:

$$X - \frac{\dot{M}_A}{p} - \frac{T}{p} = a_0 + a_1\left(X - \frac{T}{p}\right) + a_2 \frac{M_A}{p} \quad \ldots\ldots(10)$$

$$\frac{\dot{M}_A}{p} + \frac{T}{p} = b_0 + b_1 \frac{T}{p} + b_2\left(\frac{M - M_A}{p}\right) \quad \ldots\ldots(11)$$

Multiplying each by p and collecting terms:

$$p\left[(1 - a_1)X - a_0\right] - \dot{M}_A - (1 - a_1)T - a_2 M_A = 0 \quad \ldots\ldots(12)$$

$$pb_0 - \dot{M}_A - (1 - b_1)T + b_2 M - b_2 M_A = 0 \quad \ldots\ldots(13)$$

Since X, T and M are exogenous, these two equations determine the endogenous variables, p and M_A (and hence, by (3), $\dot{M}_B$).

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[1] This is also true of the nonagricultural sector:

$$\dot{M}_B = T - pC_B \quad \ldots\ldots(9)$$

but this follows from (4) and (8).

Let us first examine the equilibrium situation implicit in Equations (12) and (13). Let $\dot{M}_A$ be zero (as it must in statice quilibrium) and solve explicitly forp and M_A. The results are sufficiently complex that we will write them out on the assumption that a_0 and b_0 are zero; this further loss of generality does not, I believe, greatly affect the conclusions. The equilibrium values are[2]

$$M_A = M - \frac{1-b_1}{b_2} T = \frac{1-a_1}{a_2} (pX - T); \text{ also } M_B \frac{1-b_1}{b_2} T \quad ..(14)$$

$$pX = \frac{a_2}{1-a_1} M + \left[1 - \frac{a_2(1-b_1)}{b_2(1-a_1)} \right] T \quad .....(15)$$

It is worth noting that, in such a simple economy, the quantity theory of money is valid—each sector holds an amount of money balances proportional to its money income. It should not surprise anyone that the quantity theory does not appear in its usual form in Equation (15), for it has long been known that redistributions between sectors of the economy having different velocities (though each is constant) will alter the velocity of the economy as a whole[3].

Finally, we should examine the dynamic part of the system to ascertain that this equilibrium is stable. The differential Equation (13), letting $b_0 = 0$, may be solved for M_A in terms of the initial value of M_A (M_A^0) and the equilibrium value of M_A $\left[M_A^E = M - \frac{1-b_1}{b_2} T, \text{ by Equation (14)} \right]$:

$$M_A = \left[M_A^0 - M_A^E \right]_e^{-b_2 t} + M_A^E \quad .....(17)$$

Since b_2 is assumed positive, M_A will inexorably approach its equilibrium value (M_A^E) despite any initial discrepancy ($M_A^0 - M_A^E$). Furthermore, we can use (12) and (13) to eliminate M_A, (17) to eliminate $\dot{M}_A$, and (14) to eliminate M_A^E to find:

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[2]For all variables to be non-negative in equilibrium, it is necessary (as concerns M_A) and sufficient (as concerns both M_A and P) that

$$T \frac{b_2}{1-b_1} M \quad .....(16)$$

If this is not so, all the money in the economy cannot prevent the nonagriculturists from trying to save and no equilibrium is possible.

[3]If the velocities of the two sectors, $\frac{a_2}{1-a_1}$ and $\frac{b_2}{1-b_1}$ respectively, are equal, the term involving T in (15) disappears.

$$pX=\frac{a_2}{1-a_1}M+\left[1-\frac{a_2(1-b_1)}{b_2(1-a_1)}\right]T+\frac{a_2-b_2}{1-a_1}\left[M_A^0-M_A^E\right]_e^{-b_2t} \quad (18)$$

Hence, if the system is always in monetary equilibrium ($M_A^0 = M_A^E$), the total *value* of production (pX) will never be altered even by changes in X. Foodgrain output may fall, then prices will rise; if X later returns to its original value, so will p, provided only that the government does not alter M or T.

TO SECTION III

Once foodgrain hoards are introduced into the agricultural sector, Equations (5), (6), (7) and (8) become:

$$C_A = a_1\left(X-\frac{T}{p}\right)+a_2\left(\frac{M_A}{p}+S_A\right) \quad \ldots\ldots(19)$$

$$C_B = b_1\frac{T}{p}+b_2\left(\frac{M-M_A}{p}\right) \quad \ldots\ldots(20)$$

$$X = C_A + C_B + \dot{S}_A \quad \ldots\ldots(21)$$

$$\dot{M}_A = pC_B - T \quad \ldots\ldots(22)$$

where a_0 and b_0 are again assumed zero, and S_A is written for agricultural foodgrain stocks. Again, using (21) and (22) to eliminate C_A and C_B we find;

$$M_A = M-\frac{1-b_1}{b_2}T+\left[M_A^0-M_A^E\right]_e^{-b_2t} \quad \ldots\ldots(23)$$

$$p\left[X-\frac{1}{1-a_1}\dot{S}_A-\frac{a_2}{1-a_1}S_A\right]=\frac{a_2}{1-a_1}M$$

$$+\left[1-\frac{a_2(1-b_1)}{b_2(1-a_1)}\right]T+\frac{a_2-b_2}{1-a_1}\left[M_A^0-M_A^E\right]_e^{-b_2t} \quad \ldots\ldots(24)$$

Equations (23) and (24) are analogous, where agricultural foodgrain hoards exist, to Equations (17) and (18), where the only wealth form is money. Again, it should be noted that any disturbance from equilibrium tends to

disappear since b_2 is positive. In equilibrium (*i.e.*, when $M_A^0 = M_A^E$), the right-hand sides of each of (23) and (24) are identical with those of (17) and (18). Thus, whether agriculturists hold foodgrain balances or not, the distribution of money balances between the two sectors will be the *same* The *real*-money wealth of each sector will, however, be lower (when foodgrain stocks are held) if

$$\dot{S}_A + a_2 S_A > 0 \quad \ldots\ldots(25)$$

The reason is as follows. If (25) holds, the term in brackets on the left-hand side of (24) will be less than X; hence, the right-hand side being unaffected by S_A, p will be higher. Thus, the possibility of positive values of S_A means, if (25) holds, a higher level of prices in the economy. In fact, in euqibirium (where $\dot{S}_A=0$), the total real-wealth holdings of the ecomony will be from Equation (24):

$$\frac{M}{p} + S_A = \frac{1-a_1}{a_2} X - \left[\frac{1-a_1}{a_2} - \frac{1-b_1}{b_2} \right] \frac{T}{p} \quad \ldots\ldots(26)$$

This is *exactly* the same, if $\frac{1-a_1}{a_2} = \frac{1-b_1}{b_2}$, as the total real-wealth holdings, in equilibrium, in Section II (derived from Equation (18)[4]. Since, in Section II, $S_A=0$, p must be higher in the economy when foodgrain stocks are held.

The critical point about (24) is its indeterminacy. To say anything about p, given X, M and T, we *must know something* about the behaviour of S_A. Without such knowledge, one cannot know whether monetary policy will be effective.

It is easily verified that, if S_A is *always* a fixed fraction of total-wealth balances in the agricultural sector, then monetary policy is effective (in the sense defined earlier). In fact, such a portfolio equation

$$S_A = c\frac{M_A}{p} \quad \ldots\ldots(27)$$

is implicit in the work of Section II, but with c there set equal to zero. The possibility discussed in Section III is that at any moment of time, the desired portfolio relation of the agricultural sector is

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[4] If $\frac{1-a_1}{a_2} \neq \frac{1-b_1}{b_2}$, they will differ at least slightly because of the different values of p.

$$S_A > c\frac{M_A}{p} \quad \ldots\ldots (28)$$

Then, if (in equilibrium with (27) holding true) the money supply is increased, the analysis of Section II applies and p rises. If, however, p rises because X falls, then a return of X to its previous level means any one of three things may happen:

1) p returns to its previous level [and (27) is re-established with no change in S_A].

Or

2) S_A rises, p remains at its new higher level [and (27) is not re-established].

Or

3) M (and hence M_A) rises [and (27) is re-established with no change in S_A].

The text (Section III) suggests that possibility 1) may be unlikely to occur in which case the government must choose between 2) and 3). The third possibility is clearly preferable.

This choice may also be seen through the equilibrium equations of the system described by Equations (19) through (22):

$$M_A = M - \frac{1-b_1}{b_2}T \quad \ldots\ldots (29)$$

$$p\left[X - \frac{a_2}{1-a_1}S_A\right] = \frac{a_2}{1-a_1}M + \left[1 - \frac{a_2(1-b_1)}{b_2(1-a_1)}\right]T \ldots (30)$$

$$C_A = X - \frac{T}{p} \quad \ldots\ldots (31)$$

$$C_B = \frac{T}{p} \quad \ldots\ldots (32)$$

If p rises (because X falls temporarily) and X, M and T remain unchanged (as they will after crops return to normal if M and T are not permitted to rise), then S_A must rise (if p does not fall to its original level) and C_B becomes permanently lower than before (and C_A concomitantly higher). If, however, the government permits a rise in M and T proportionate to the

rise in p, no increase in S_A need occur and no change in C_A or C_B need take place. If p rises (because of a temporary fall in X) and the government wishes no change in the *real* variable of the system, *one way* to achieve this is to raise M and T proportionately. It may be the only way to prevent a rise in the equilibrium amount of S_A and C_A and a fall in that of C_B (with an additional temporary loss of consumption, while the larger S_A is being accumulated).

A Comment

Hugh T. Patrick and Lester V. Chandler*

In his interesting article, Richard C. Porter presents a model "to show that, in agrarian (or predominantly agricultural) economies it may be *impossible* to counteract apparently temporary shifts in the price level by means of traditional monetary policy". In Section III, to which this comment relates, he assumes a two-sector model, with one sector (agriculture) producing the single commodity (foodstuffs) in the economy and the other sector living on lump-sum transfer payments from the agricultural sector and producing nothing. These lump-sum taxes are fixed and in money form; Porter assumes (incorrectly, as is discussed below) that "none of the conclusions would be altered if the tax were fixed in real terms" (footnote on p. 227). Output is independent of economic considerations (determined by the "caprice of nature"). A fixed money supply is given, as is a desire to hold a certain real-wealth balance relative to real income and consumption. Speculation on the basis of expectations of price changes is assumed away. The nonagricultural sector holds its real wealth only in the form of money, while the agricultural sector holds both money and hoards of foodgrains. While Porter grants that we know almost nothing about "what causes changes (and by how much) in the relative proportions of foodgrain stocks

*Dr, Patrick, Assistant Professor of Economics at Yale University, and Dr. Chandler, Professor of Economics at Princeton University, were visiting Professors at the University of Bombay (India) during 1961/62.

and money in rural wealth balances", his analysis rests entirely on presumed changes in this fraction. As he indicates, with an unchanging fraction, monetary policy is successful in maintaining a certain price level.

Porter considers an initial equilibrium position, with a certain price level, with both the agricultural and nonagricultural sectors holding the desired amounts of real wealth in relation to their real incomes, and with the wealth holdings of the agricultural sector divided in the desired fraction between real-money balances and stocks of foodgrains. Suppose output declines temporarily (and with it agricultural real income); with reduced goods put on the market the price rises to a new temporary equilibrium. Now, suppose output rises to the previous level. Porter argues that the framers are likely to reattain their earlier real-wealth positions by simply stockpiling their self-produced foodgrains, and in doing so raise the fraction of their real wealth held in foodstuff hoards. Under these circumstances output available to the nonagricultural sector would not rise and the price level would not fall to its previous position. Why do the farmers behave in this manner? In Porter's words (and italics):

> It may not seem reasonable at first glance that farmers should desire a different composition of wealth now than they did in exactly the same situation earlier (*i.e.*, before their output fell). But the situation is *not* exactly the same. Earlier they *held* a certain composition of money and foodgrains; now they must *re-establish* that composition and must *push down* the price of their merchandise to do it. Of course, the farmers do not know beforehand that they will drive down prices, but they will notice that prices are falling as soon as they try. It is very likely that they will then cease to market such large amounts and will become satisfied with holding a larger fraction of foodgrain wealth (p. 230).

Such an outcome would militate against two of Porter's objectives: to restore the real income of the nonagricultural sector and to prevent retrogression in the monetization of the rural sector.

The last sentence in the quotation from Porter is crucial. Is it "very likely" that declines of prices below the high levels reached in a year of partial crop failure will make money balances less attractive and foodgrains more attractive as means of holding wealth? This analysis surely implies very peculiar assumption either about farmer behaviour or about the nature of competition in the agricultural sector. He does not state that there is a monopoly in the sale of foodstuffs nor explicitly make the assumption, which would be unrealistic in most underdeveloped countries, that any individual

farmer lias, or thinks **he** has, any influence on price through his sales[1]. **Moreover,** he explicitly rules out expectational effects. Thus, farmers will not regard their own sales as reducing the price of foodstuffs. Why, then, will they cease to market their output? Porter granted earlier in his article that there is no economic difference between foodstuffs and money. When the farmer sells his output he obtains a lower price than had existed earlier (when output had declined), but by the same token the money he receives in exchange is worth more in terms of foodgrains. The opportunity cost of each (money and foodstuffs) is the other. From the viewpoint of the individual farmer who cannot influence price, his real wealth is the same in either case. Unless the farmer is irrational or has some peculiar illusion about the effect of the composition of his real wealth on its total amount, there seems to be no *a priori* reason why the farmer should behave in the manner Porter suggests to hold more of his wealth in foodgrains and less in money.

The outcome envisaged by Porter becomes no more likely when expectations are taken into consideration. He might have argued, though he did not, that farmers would withhold supplies at any price below the peak reached after the crop failure because that peak price had come to be considered "normal", any drop below which would be expected to be followed later by a price rise, which would make money an inferior means of storing wealth. There could indeed be such a "reservation price", somewhat analogous to the Keyncsian liquidity trap. But surely this would be at some level that was low by historical standards, not at or near the highest level attained in recent history. Price declines from the highest levels recently experienced are just as likely, if not more likely, to create expectations of further declines which would counsel holding a larger rather than a smaller fraction of wealth in the form of money.

Thus, Porter has not provided plausible reasons why it is "very likely", or even likely at all, that farmers will not market foodstuffs as prices

[1]If he docs implicitly assume the existence of monopoly elements in agriculture, his analysis would have to be modified considerably. Under this condition, it would be rational for monopoly farmers to withhold output by raising the fraction of foodstuffs in their total wealth in order *to* prevent a price decline, but for a reason that Porter does not specify. The lump-sum tax is in money form; the real income of the farmer is reduced if the price of foodstuffs declines, since the money tax transferred to the nonagricultural sector has a higher purchasing power. The logical conclusion would be for the farmers to band together and withhold virtually all of their output so that the price would rise to its maximum limit. This limit in theory would be infinity, but this price would kill off all the nonagricultural population. For political reasons perhaps the maximum limit would approach that sufficient to provide just, enough foodstuffs to the nonagricultural sector for subsistence with zero wealth balances. Thus, in a monopoly situation with lump-sum money taxes the farmers logically would not only want to maintain a certain high price level (derived from the previous decline in output) but would want to push the price as high as possible, subject to noneconomic constraints (humanitarianism, revolt by the nonagricultural sector, government interference, raised taxes, *etc.).* While the proportion of money in their real wealth would likely decline, its real wealth would be sufficiently high that the agricultural sector would hold a larger share (perhaps all) of the money supply.

fall below their peak and that farmers will end up holding more of their wealth in foodstuffs and less in money balances than in the earlier period of equilibrium. He, therefore, has not made his case that a policy of holding the money supply constant in such circumstances will retard the monetization of agrarian economies. Suppose, however, that farmers do behave in the manner considered by Porter to be "very likely" diverting foodgrains into hoards and holding a smaller fraction of their real wealth in money. Let us analyze his policy prescription. He argues (p. 232) that the authorities should "accept the price rise as inevitable and increase proportionately (to the price rise) the money supply and the tax level....". He validly states: "It will be possible for farmers to replenish their money wealth *without* forcing down prices". But he is on shaky ground when he adds, "....and there is no reason why they should not be willing to do so". Let us consider seriatim the proposed increases of the money supply and the tax level.

If farmers have decided to hold more of their wealth in foodgrains and less in money, what reason is there to believe that an increase in the nominal money supply will lead them to reverse the decision? One immediately becomes suspicious of any argument to the effect that increasing the nominal money supply will increase the demand of the community, or of any section of it, for real-money balances and reduce its demand for stocks of wealth in other forms. Porter had already assumed that at any price below the existing level, farmers would prefer foodstuffs to money as a form of holding wealth. But it does not follow from this that at the existing level of prices, farmers would consider money balances a perfect substitute for foodgrain stocks. It seems strange to assume that there is an infinite elasticity of substitution in agricultural wealth balances at one price level and not at another[2]. Unless this additional assumption is made, Porter's prescription would lead to still further price increases. Farmers would offer more foodgrains for the additional money only at higher prices. And one is left to wonder why they should do so even then, for each unit of money would represent less purchasing power over foodgrains.

In fact, the long-run effects of following Porter's prescription of increasing the money supply proportionately with each rise of prices may be just the opposite of those he desires; they may be to increase the fraction of agricultural wealth held in foodstuffs and to decrease the fraction held in money. With any rise in output, the price level will never decline, since under Porter's assumption the farmer will prefer to hold increased real-wealth balances as foodstuff hoards rather than in monetary form unless the price level is maintained through increases in the money supply. When

[2]If an assumption of monopoly power is injected, this question becomes relevant. If farmers will withhold supplies to prevent prices from falling, why not withhold supplies to raise prices.

output declines, however, prices will rise. Thus, there is an upward ratchet effect on the price level of foodgrains: with output increases prices will not fall and with output declines prices will rise. Even if farmers do not speculate on short-run expectations, they will surely learn in the longer run that by holding money balances they never gain and sometimes lose, but by holding foodgrains they never lose. This is hardly conducive to monetization of the agricultural sector.

Now let us look at Porter's analysis and prescription relative to taxes. First, it should be noted that he is wrong in stating (footnote on page 227), "none of these conclusions would be altered if the tax were fixed in real terms, *i.e.*, so much foodgrains rather than so many units of currency". With the tax fixed in terms of money, the real income of the nonagricultural sector falls with the decline of output and is restored only as prices fall. But if the tax is fixed in terms of foodgrains, the real income of the nonagricultural sector remains constant throughout; all changes in total output are reflected in changes in the real income of the agricultural sector. This would surely make for some difference in the extent of the price rise, in the distribution of wealth holdings between the two sectors, and perhaps also in the composition of the wealth balances of the agricultural sector.

But let us return to Porter's case in which taxes are fixed in terms of money and their amount is increased in proportion to the initial rise of prices. The purpose, of course, is to restore the real income of the nonagricultural sector. This will indeed be the result if farmers respond by selling enough additional foodgrains at existing prices to pay the increased taxes. In fact, if the farmers as a result of a once-only increase in money taxes return to the former proportion of foodgrains in their real wealth balances, then the original equilibrium and original price level will be restored without any change in the money supply. But since Porter has assumed that farmers no longer wish to hold the former amounts of real-money balances relative to their income and wealth, this may not happen. Farmers may simply pay the increased taxes out of their money balances, holding as a limit all their real wealth in foodgrain hoards. To restore the real income of the nonagricultural sector under these circumstances it may be necessary to set taxes at a level high enough to absorb all the money balances of the agricultural sector and also to force farmers to sell enough of their hoards to reduce their foodgrain stocks to their initial equilibrium level.

Porter states (p. 232) that if both the money supply and money taxes are increased proportionately with the price rise, all the real variables of the system — consumption, real income, *etc.*,—will remain unchanged from their original equilibrium position. But this is possible only if, as seems to us

unlikely, the increase in the nominal money supply induces farmers, at the existing level of prices, to restore their real-money balances to their initial relationship to agricultural real income and real wealth. But if farmers persist in holding real-money balances equal to only a smaller fraction of their real income and wealth, neither Porter's formula nor any other can restore all the real variables simultaneously. If it restores farmers' real incomes to the initial level, their foodgrain stocks will be larger and the real income of the nonagricultural sector lower. To bring the foodgrain stocks of farmers to their initial level and restore the real income of the nonagricultural sector, it would have to lower agricultural real income below its initial level.

Let us consider these issues in a somewhat broader context, going perhaps beyond the limits Porter set himself. Porter's article does raise in specific form the general problem of what happens to the price level and to monetization of an economy when for any reason there should occur a shift in the proportion of real wealth held in monetary form and that held in inventories of real goods, given the money supply, level of money taxes (and government expenditures), level of output and real consumption and real wealth functions. Suppose that, starting from equilibrium conditions, farmers decide to hold a larger share of their real balances in foodgrains and less in money, leaving unchanged the relation of their total wealth balances to their real income. During the period when farmers were shifting from real-money balances to foodstuffs as a store of wealth, prices would rise for two reasons: the decrease of farmers' real-money balances and their offer of smaller supplies on the market in order to increase their stocks. Moreover, with price increases and no change in the amount of money tax, the farmers would have a higher real income. After farmers had succeeded in raising their stocks of foodstuffs to the desired level, prices would fall somewhat as farmers were once again willing to sell more of their output. But prices would not fall to their former level both because the farmers' demand for real-money balances remains lower and because with a higher real income they would consume more foodgrains and sell less than before. Thus, with unchanged levels of money taxes and money supply, farmers end up both with larger stocks of foodstuffs and a higher real income. At the same time the real income of the nonagricultural sector is reduced within the period in which the adjustment takes place (since farmers sell less and prices rise) and thereafter (since prices fail to return to their original level).

In summary, the results of the farmer's shift to holding a greater proportion of his real wealth in foodgrains are: decreased monetization of the real-wealth balances of the agricultural sector; a higher price level; decreased real consumption in the economy in the period of adjustment; and changed income distribution in favour of the farmers. If we assume that we cannot influence the farmers to change their new fraction of foodstuffs in their real-

wealth balances, how can we remedy the other results?

The decrease in real consumption within the period of adjustment is necessary because the increase in foodstuff hoarding is real saving. There arc two alternatives: to eliminate the real saving and thereby restore consumption to its original level for all periods; or to shift (some or all of) the burden of decreased real consumption to the agricultural sector from the nonagricultural sector. The first alternative can be met, if farmers persist in holding larger stocks of foodgrains relative to their real income, by forcing down their absolute level of foodstuff hoards to its former position by using taxation to lower agricultural real income below its former level and then to keep it at the lower level. A mere restoration of the former distribution of real income between the agricultural and nonagricultural sectors would not lead farmers to lower their stocks of foodgrains to the old level, if the second alternative is decided upon, taxation can reduce farmers' real income below its previous level initially enough so that their increase in foodstuff hoards would be just compensated by decreases in their own consumption. Eventually the desired level of foodstuff hoards is reached and taxation can be relaxed enough to allow the farmers their initial level of real income.

Suppose the authorities are unwilling to tax farmers heavily enough to force a reduction of farmers' holdings of foodgrains to the old level and instead aim only at restoring the real income of the nonagricultural sector. There are at least two ways of doing this: 1) leave the nominal money supply constant, accept the higher price level resulting from the decrease in the farmers' demand for real-money balances, raise money taxes enough to compensate for the rise in prices and transfer these taxes to the nonagricultural sector; 2) levy on the farmers a "once-only" tax equal to the original decrease in the farmers' demand for money balances and destroy this money. With equal decreases in the demand for and supply of money, prices will fall back to their original level after farmers have raised their stocks of foodstuffs to the desired level and again offer for sale the old fraction of their output. Of the two methods, we prefer the second which, in addition to restoring the initial income distribution, would also restore the initial price level. Admittedly, this will not necessarily induce farmers to return to holding only the former fraction of their wealth in the form of money. But we think Porter's prescription of increasing the nominal money supply in proportion to the initial price increase would be even less successful, for it would almost surely lead to still further price increases. It is suggested that price stability is not only compatible with monetization of the economy but is indeed most conducive to it. Upward ratchet-type price movements may eventually induce a flight from money into real inventories and tend to demonetize the economy.

The difficulty with Porter's model is that it is not based on any clearly defined assumption or analyses regarding the farmer's division of real-wealth balances between money and stocks of foodstuffs. What is required, and surely Porter would agree, is more understanding of such things as these: the relationships between real-wealth balances of different groups and such variables as their real incomes and consumption; why these balances are divided in certain proportions between real goods and money; and to what stimuli and how strongly these proportions change. Without the advantage of such information, no model dealing with this problem can supply helpful hints to the monetary authorities.

Rejoinder

Richard C. Porter

Professors Patrick and Chandler have shown, carefully and correctly, that my analysis depends critically upon a particular assumption. Despite their vehement disagreement with this assumption—that farmers will hold a larger part of their wealth in foodgrains when the alternative is to convert those grains into money at declining prices—I still believe in its realism and am grateful for the opportunity to elaborate its defence:

1) Farmers tend to be optimistic about future prices and outputs; the strain of existence might be unendurable without this optimism. The result is that high prices are quickly seized upon by farmers as normal prices.

2) Farmers have short memories and treat recent prices as expected future prices. For example, agricultural supply studies in Pakistan show that

the use of several lagged priccs fails to improve regressions; just last year's price is sufficient to explain almost the entirety of any response to price [1 ; 2, Chapter 4]. Thus, last year's high price becomes this year's expected price; but more important, it becomes this year's concept of a "normal" price.

3) Farmers hold wealth primarily as a precaution against crop calamities. When one farmer's crop fails, so also will many of his neighbour's crops and high food prices are likely to prevail in the region. Thus, his money will be used to purchase food at (what he considers) normal or above-normal prices, and he will not be anxious to acquire money if it requires selling food at (what he considers) below-normal prices.

Primarily for these reasons, I do not believe farmers would be willing to maintain the money-fraction of their wealth in the face of prices which are falling below "normal" levels.

If this critical assumption is accepted, everything else follows; if not, none of it follows. Whether one accepts or rejects it depends upon one's view of the way the world operates. The assumption is patently an empirical guess. The assumption I chose may be empirically inaccurate, but it is not logically incorrect (as Messrs. Patrick and Chandler seem to imply). For example, there is nothing "strange" in the fact that the rate of monetization cannot be accelerated by rising prices but can be temporarily reversed by falling prices, *i.e.,* what Messrs. Patrick and Chandler call "an infinite elasticity of substitution in agricultural wealth balances at one price level and not at another". It is no more "strange" than the traditional statement about monetary policy being like pulling or pushing on a string. In the short run especially, we can find many such asymmetries in the world.

1 agree that rising prices *seem* "hardly conducive to monetization of the agricultural sector". But the world has long experienced simultaneously gradual inflation and gradual monetization. Our historical experience is that price stability is neither necessary nor sufficient for nionetization. In any case, I was not advocating rising prices; rather I was suggesting that it might be impossible to reverse a price rise that had unfortunately already occurred.

REFERENCES

1. Clark, R., "The Economic Determinants of Jute Production", *FAO Monthly Bulletin of Agricultural Economics and Statistics*, September 1957.

2. Falcon, W., *Agricultural Supply Analysis in an Underdeveloped Area: A Case Study of West Pakistan.* Unpublished manuscript.

3. Georgescu-Roegen, N., "Economic Theory and Agrarian Economies", *Oxford Economic Papers*, February 1960.

4. Patinkin, D., *Money, Interest, and Prices.* (New York : Row Peterson and Co., 1956).

The Inflationary Implications of Crop Failure

Richard C. Porter

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The Inflationary Implications of Crop Failure

Richard C. Porter

INTRODUCTION

In discussions of the economic problems of underdeveloped countries, the thinking of layman and of professional economists often diverges widely. Nowhere is this disagreement more patent than in the case of food production and its effects upon the price level. In government agencies, newspapers and public discussions, the view that bad crops "cause" inflation is ubiquitous, while economists are usually quick to point out the difference between movements in relative prices and the general price level.

The economists' view is sophisticated and requires elaboration. For nearly a century, there has been a division of economic problems into two basic categories: those concerned with the value and production of particular commodities relative to other commodities; and those concerned with the total production of an economy and the general price level of the output. There is now an extensive theory of the effect of a decline in the output of a commodity *(e.g.,* food) upon its price. Under most conditions, one can safely predict that an autonomous[1] reduction in the output of food will induce a

[1] An "autonomous" or "exogenous" movement merely means that it is not capable of economic explanation (at least within the context of the theory being discussed).

rise in the price of food *relative to other prices*. But there is no reason to expect a rise in the general price level; for that is determined by another theory—a theory which does not concern itself with production of particular commodities, but rather with total production in the economy.

If food output were a small part of this total production, the economist would say that the overall price level is not affected by a decline in food output; the rise in food prices, even if large, would be offset by slight declines in other prices[2] so that the general price level would remain stable. Food production in Pakistan is, however, no small part of total output. Thus, a decline in food production almost always implies a decline (though by a smaller percentage) in total output of the economy and, other factors remaining unchanged, a rise in the general price level. When the economist says this, however, he is not agreeing that a fall in food output "causes" inflation; once food production regains its former level, traditional economic theory asserts that, again if other factors remain unchanged, prices will decline to their previous levels.

The purpose of this paper is to suggest that economists have paid insufficient attention to these "other factors" which, if unchanged, keep poor crops from permanently affecting prices. The very fact of a bad food crop in a particular year[3] may cause changes in "other factors" which are irreversible; if this is so, the bad crop may cause a permanent rise in the general price level (and perhaps even a permanent *series* of rises in prices). The layman's feeling that crop failures *cause* inflation may be essentially correct though, as is often the case in economics, it is not easy to know the dancer from the dance.

It is important to insert here a few words about the "prices" we shall be discussing. Something like two-thirds of the normal value of Pakistan's total national output is food, and about two-thirds of that is consumed by its producers. "The price of food" is, therefore, determined in markets through which passes only about one-third of the nation's food production; "the price level", a weighted average of the prices of food and other commodities is, therefore, determined in markets through which passes only about one-half of the nation's total production. Thus, the prices we will discuss are marginal prices, though certainly not in so extreme a sense as are, for example, Karachi gold exchange or bonus-voucher prices. Implicit

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[2]Not all other prices would fall by the same amount; some might even rise. But the general tendency would be for other prices to fall.

[3]Throughout this paper, a bad food crop will be taken to mean general food shortages (although efforts to alleviate the shortages through food imports will be discussed in Section IV). In Pakistan, a crop failure in one season may be partly offset, within the year, by the bounty of a later season; we are here concerned with a *year* of, on the whole, inadequate food crops.

throughout this paper is the assumption that these prices have effects upon the economic behaviour of many who buy or sell little through these markets: in other words, the "nonmonetized" or "unorganized" sector is assumed to be neither insulated from nor impervious to the prices set in the markets of the organized sector. From this, it follows that any effort to control Pakistan's economic destiny requires knowledge of the causes of change in food prices and the price level[4].

I

Poor crops mean high food prices — a statement safe to make but hard to quantify. Even the question whether a decline in food production by a given percentage will induce a greater or smaller percentage rise in food prices cannot be unequivocally answered[5]. This fact, surprising since food

[4]It is also important to study the effects of such price changes upon investment and growth, but this is beyond the scope of this paper.

[5]Study of the 1950's does not help too much. Given in the table below are indices of food production of the preceding year (on the assumption of a lag in distribution) and wholesale prices (primarily food items).

Year	Food production of previous year	Wholesale prices	Percentage change of food production	Percentage change of prices	Elasticity
	(1)	(2)	(3)	(4)	(5)
1951/52 ..	100	100	*	*	*
1952/53 ..	90	107	—10	+ 7	—.70
1953/54 ..	90	89	0	—17	*
1954/55 ..	107	70	+19	—21	—1.10
1955/56 ..	97	88	— 9	+26	—2.89
1956/57 ..	88	116	— 9	+32	—3.56
1957/58 ..	106	113	+20	— 3	— .15
1958/59 ..	100	118	— 6	+ 4	— .67
1959/60 ..	95	123	— 5	+ 4	— .80
1960/61 ..	110	125	+16	+ 2	+ .13

(*)means incalculable.

Sources: Col. (1) [9, Table 2 "Index of Agricultural Production, Food Crops" (C.S.O.), converted to 1951/52=100].

Col. (2) [8, Appendix C]. Laspeyres Indices of the two wings averaged. Figure for 1960/61 from [5].

Cols. (3) and (4) are the annual percentage changes of Cols. (1) and (2), respectively.

Col. (5) is not the usual elasticity calculation. It is the percentage change in prices divided by the percentage change in output (Col. (4) ÷ Col. (3)), the exact inverse of the usual elasticity.

The figures in the last column offer no conclusive proof as to whether the "elasticity" of price response is greater or less than one. It is worth noting, however, that food output declines were always accompanied by raised prices; output increases were not consistently accompanied by lower prices. One must be wary about overworking such statistics as these—in Pakistan in the 1950's, there are distracting circumstances in every year.

certainly has a price-inelastic demand, results from the stabilizing adjustments of food stocks and imports which may more than offset the destabilizing decline in the marketed fraction of the food crop. Thus, we cannot say whether a fall in food output will cause a rise or fall in the incomes of farmers even if the implicit money value of their self-consumed output is included[6].

This inability poses a great problem, for it is important to know which groups gain and which lose in a year of poor crops. Of course, the nation must lose[7]; and urban groups, both wage and profit-earning, will surely suffer in at least the early stages of a rise in food prices (before any changes occur in industrial wages, production, sales, or prices). But it is not impossible that some or all food-producers will gain from poor crops. In fact, the distinction between a farmer who gains and one who loses with a decline in food production depends upon two factors: one, the rise in food price relative to the decline in his output; and two, the fraction of his crop

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[6]Let Y = the cash income of food producers = p(X—C), where p is food price, X is output, and C is self-consumption. Let Y′ = the value of their food output = pX. Then,

$$\frac{\Delta Y'}{\Delta X} = p\left[1 + \frac{\Delta p/p}{\Delta X/X}\right] \quad \text{(I-1)}$$

where Δ means the change from the preceding year and the product of two Δ's is neglected. Y′ will move in the opposite direction to X if, and only if,

$$\frac{\Delta p/p}{\Delta X/X} < -1 \quad \text{(I-2)}$$

Moreover,

$$\frac{\Delta Y}{\Delta X} = p\left[1 + \frac{\Delta p/p}{\Delta X/X}\right] = p\frac{\Delta C}{\Delta X}\left[1 + \frac{\Delta p/p}{\Delta X/X}\cdot\frac{\Delta X/X}{\Delta C/C}\right] \quad \text{(I-3)}$$

Y will move inversely with X only if

$$\frac{\Delta p/p}{\Delta X/X} < -\frac{1 - \Delta C/\Delta X}{1 - C/X} \quad \text{(I-4)}$$

Since $\frac{\Delta C}{\Delta X} < \frac{C}{X}$ (*i.e.*, food growers generally increase the self-consumed fraction of their output in bad years),

$$\frac{1-\Delta C/\Delta X}{1-C/X} < -1 \quad \text{(I-5)}$$

and (I-4) is a more restrictive condition on $\frac{\Delta p/p}{\Delta X/X}$ than (I-2)

[7]Barring the unlikely possibility that nonfood production expands sufficiently to compensate people for the reduction of food.

which he consumes[8]. The values of these two factors, which would just permit the farmer to consume the same amount of both food and nonfood items as he could in the previous year of better crops, are shown in Figure 1.

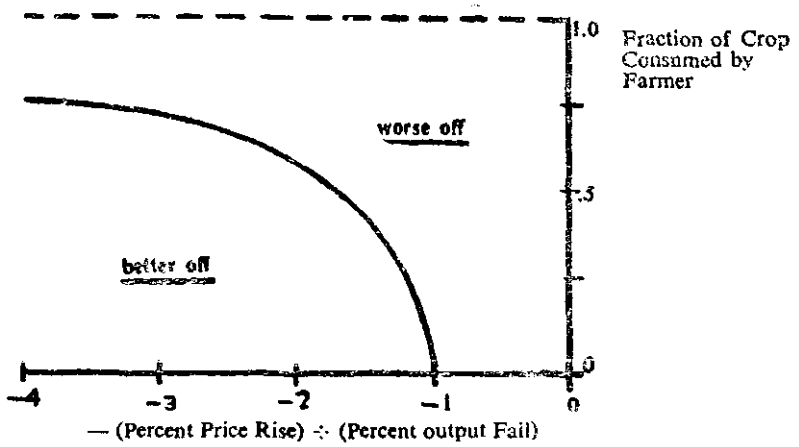

Figure 1

If all farmers' per-cent-output declines exceed the per-cent-price rise, then no food-producer is better off (*i.e.*, none can increase his consumption of at least some items without decreasing his consumption of others). If, however, the per-cent-price rise exceeds the per-cent-output fall, then some farmers may gain; they are more likely to gain (and gain more) the smaller the normal consumption of their own food crop. If price responds little to output declines, there will be few, if any, gainers; on the other hand, it is unlikely that price would ever respond sufficiently (three-fold), to make gainers of the vast majority of Pakistan's farmers, small holders who consume more than two-thirds of their own crop. And, to those farmers whose crops have failed so calamitously that they become food purchasers, any rise in food prices merely augments their hardship. Thus, if any food-

[8]In the terminology of footnote 6, Y is the income available for expenditure on nonfood items. If the farmer is to maintain both his food consumption (C) and his nonfood consumption (Y), on the assumption that nonfood prices do not change, then Equation (I-3) must equal zero:

$$0 = \left[1 + \frac{\Delta p/p}{\Delta X/X}\right] - \frac{C}{X}\left[\frac{\Delta p/p}{\Delta X/X}\right] \qquad \text{(I-6)}$$

$$\frac{\Delta p/p}{\Delta X/X} = -\frac{1}{1 - \frac{C}{X}}$$

producer gains from a bad food crop, it is the large-scale farmer who consumes an insignificant part of his own crop.

There are two other groups in the economy who may gain initially from a poor food crop. One, growers of crops other than food whose prices move sympathetically with food growers' either for supply or demand reasons. And two, nonproducers whose incomes react favourably to rises in food prices. Each of these will be considered briefly.

The incomes of cash-crop (*i.e.*, nonfood) producers may improve with poor food crops either because outputs of cash crops generally move inversely with food production or because the prices of cash crops move directly with food prices. Let us consider the output side first. The simple correlation coefficient between the percentage change in yield per acre of food crops and the percentage change in yield per acre of cash crops (annual, 1948/49 through 1959/60) is 0.43 in West Pakistan and 0.53 in East Pakistan[9]. This suggests a fairly close relationship between the success of food and nonfood crops. But such a yield relationship is fraught with complexity. A shift in marginal acreage between food and nonfood will by itself lower the yield per acre of the crop whose production is expanded and raise that of the other crop; if this influence could be removed, the yield per acre correlations might be larger. Experience over the past decade with government procurement has convinced administrators that farmers are not slow to rearrange production plans when prices and controls change[10]. If the yields per acre of food and cash crops move readily and in inverse fashion as a result of economic and administrative factors, then they must move very similarly as a result of innovation and weather factors. Since we are concerned with an autonomous decline in food output, we will assume that a similar (but probably lesser) decline occurs in cash-crop production.

Then, whether the cash-crop producer gains or loses with poor food crops depends chiefly upon the movement of cash-crop prices in the face of poor cash crops. If neither food nor manufactured-goods prices rose, the cash-crop farmer would be as well off as before if cash-crop prices were to rise by the same percentage as cash-crop production had declined. Since food prices will have risen, however, cash-crop prices must rise by a *larger* percentage than output falls if the cash-crop farmer is to be able to purchase the same amount of food and manufactured goods as before. How much

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[9]The data are taken from Ministry of Agriculture figures for production and acreage of principal crops in East and West Pakistan. Gram is included in food crops (*see* [9, Tables 5-8, Pp. 5-8]).

[10]Displays of "economic" behaviour by farmers are probably increasing but are certainly not new. In the 1920's, for example, "...owing to the boom in cotton produced by the [First World] war, the area under it in the [Punjab canal] colonies trebled in five years, and in a single year, when prices dropped, it fell by 600,000 acres. Similarly, the low price of raw sugar in 1923-24 led, the following year, to a reduction of 80,000 acres in the area under sugarcane" [1, Pp. 1-10; 2, p. 153].

larger depends upon several factors[11]. But the same conclusion may be reached concerning the cash-crop farmers as the food-producers, namely, if any farmers are better off in a year of poor crops, it will probably be those with large holdings whose food consumption is a small fraction of their total income.

There is another diversely composed group that may gain by poor food crops and the concomitant rise of food prices — rural money-lenders, land-rent receivers, food wholesalers (rural and urban), and food speculators. Despite the great interest the Pakistan governments have shown in these people, very little is known of the conditions under which they specially thrive. Some surely benefit from rising food prices; for others there is a question whether the higher prices are a sufficient offset to the effects of declining output (and marketed share). Here it is only noted that this group should not be overlooked during the enumeration of gainers and losers from crop failures.

II

In this section, we will try to find the effect upon consumption patterns of an autonomous decline in food production. We will continue to assume, for a while longer, that prices, wages and production in urban manufacturing are unchanged; and we will use the conclusions of the previous section that certain rural groups, primarily large-scale farmers, may be better off as a result of the output decline and price rise of foods. Nevertheless, a vast majority of the population, and especially those who are initially poor and/or urban, will suffer a decline in real income (however measured).

That this vast majority will struggle to keep its already-low food consumption from declining too much is certain. Whether this phenomen-

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[11]Let p_c, p_f, and p_m be prices of cash crops, food and manufactured items, respectively; X_c is the farmer's output of cash crops; and C_f and C_m are his consumption of food and manufactured items. If saving and self-consumption of cash crops are neglected, the cash-crop producer's budget equation is:

$$p_c X_c = p_f C_f + p_m C_m \qquad \text{(1-7)}$$

If p_m is again assumed initially unchanged, then being as well off as or better off than before (*i.e.* neither C_f or C_m needs to be reduced) implies:

$$\frac{\Delta p_c / p_c}{\Delta X_c / X_c} < -1 + \frac{p_f \; C_f}{p_c \, X_c} \cdot \frac{\Delta p_f / p_f}{\Delta X_f / X_f} \cdot \frac{\Delta X_f / X_f}{\Delta X_c / X_c} \qquad \text{(1-8)}$$

Thus, unreduced welfare for the cash-crop farmer in a year of generally poor crops requires a larger rise in cash-crop prices 1) the larger the fraction of his income he spends on food, 2) the greater the rise in food prices relative to his output decline, and 3) the smaller the decline in cash-crop production relative to food production. Of course, the effect of this last term is reversed if cash-crop output *rises* in a year of poor food crops then unreduced welfare does not require the per-cent rise in cash-crop prices to exceed the per-cent fall in output.

on is labelled as a low marginal propensity to consume food (out of real income) or as low price as income elasticities of the food demand schedule[12] is not critical. It will in any case mean that, for most families, the percentage quantity decline in food consumption will be much less than the percentage food-price rise which causes the quantity curtailment. A larger fraction of money income will be devoted to food purchases[13]. A part of this increased expenditure will be at the expense of saving (or through dissaving); but past savings are not large in those low-income groups which are most affected. The total expenditure of the urban workers and poorer farmers upon goods, other than food, must decline.

Will this reduction in expenditure on manufactured goods be offset by an increase in such expenditure by wealthier groups in the economy, some of whom are better off as a result of the crop failure? Probably not, for several reasons. One, people with already high incomes are slow to revise upward their consumption plans, especially as a result of a temporary expansion of income. Two, whatever expansion does occur will very likely occur at least as much in services as in manufactured goods, and no small part in gold and land purchases. And three, the greatest part of the domestically manufactured items in Pakistan are not those that appeal to

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12 Though using a demand curve for a commodity so important in consumers' budgets is dangerous.

13 Except in unusual circumstances. Assume that, for a particular family, real food consumption (C_f) may be written as a function of real income (Y/p, where Y is money income and p the consumer price level).

$$C_f = F\left[\frac{Y}{P}\right] \qquad \text{(II-1)}$$

Then, the fraction of money income spent on food is E_f:

$$E_f = \frac{P_f C_f}{Y} = \frac{P_f}{Y} F\left[\frac{Y}{P}\right] \qquad \text{(II-2)}$$

The derivative of E_f with respect to p yields:

$$\frac{dE_f}{dp_f} = \left[(1-e_3)(1-e_2) + e_2(1-e_1)\right]\frac{E_f}{P_f} \qquad \text{(II-3)}$$

where e_1 is the percentage change in the consumer price level (p) divided by the percentage change in food prices (p_f^1); e_2 is the percentage change in real food consumption (C_f) occasioned by a one-per-cent rise in real income (Y/p); and e_3 is the percentage change in money income (Y) divided by the percentage rise in food prices (p_f).

A sufficient condition for dE_f/dp_f positive is that each of e_1, e_2 and e_3 be less than unity. e_1 will be close to one but, as will be argued in this and later sections, certainly less than one — nonfood prices will not rise as much as food prices initially. e_2 is also surely less than one. And few people are in a position where their money income rises by more than food prices; these are the unusual circumstances that may negate the statement of the text. The fraction of money income spent on food would *decline* with food price rises only if:

$$e_3 > \frac{1-e_1e_2}{1-e_2} > 1 \text{ (provided } e_1, e_2 < 1) \qquad \text{(II-4)}$$

high-income groups; it is the demand for imported goods (and export-bonus vouchers) that will rise most. As between domestically manufactured goods for consumption and for investment, the latter have a better chance of receiving the demand of high-income gainers, but these items compose a smaller part, at present, of Pakistan's manufacturing sector[14].

Following a bad harvest and concomitant food-price rises, the total domestic expenditure at prevailing prices on manufactured goods will, therefore, decline. If no excess demand already exists, this means either prices fall, production declines, stocks accumulate, or exports rise. In an economy where manufacturers spend so much time trying to get permission to raise prices, it is unlikely they will undo this hard work by lowering them —for almost any reason[15]. Thus, at first, stocks may accumulate; later, production may be cut if exports cannot be increased. Profits in manufacturing (except possibly of luxury goods) will decline significantly with urban employment perhaps also falling off. Few people in the cities gain in a year of bad crops (and those few that do must be surreptitious about it).

There is another possibility. Where prices of manufactured goods are maintained below the level required to clear markets, the loss of demand during bad crop years may mean merely a loss of *excess* demand. The amount actually sold may still be the total amount that producers wish to sell, but with shorter queues. If this is so, the manufacturer may be only very slightly worse off (because the price of his food has risen) as a result of the crop failure.

III

It is important to consider the possible effects of a food-crop failure on the foreign-exchange balance since with low foreign-exchange reserves, any increase in the balance-of-payments deficit would certainly induce very quickly changes in the government's import policies.

Pakistan's exports are almost entirely agriculturally derived, consisting largely of jute and cotton (in both their raw and manufactured states). To a great extent, world prices of jute and jute products respond to changes in Pakistan's jute crops; the same is true only slightly, if at all, of the cotton

[14]There are few investments that do not have a sizeable and fairly inflexible foreign-exchange component. In the absence of any expansion of imports, domestic investment cannot increase very much. And licences for capital imports are not likely to be increased at such times (*see* Section III).

[15]Witness Minister Shoaib's admonishment: "As their [the manufacturers'] production expands, with the same selling prices, they are faced with a pile-up of finished goods. They complain of a glut in the market; the way to clear it up is not to cut back production, but to reduce prices" [9, Speech of the Finance Minister Para. 7, p. 2].

crops. Thus, a year of generally bad crops in Pakistan will cause a rise in international jute (and jute products) prices but will not affect cotton (and cotton products) prices. Export earnings will rise only if the rise in world jute prices is quite large relative to the decline in Pakistan's jute output; more precisely, Pakistan's jute earnings will rise in the face of a bad jute crop if jute prices rise greatly when world output falls and/or if the world output also declines significantly when the Pakistan crop fails[16].

The general conclusion of this may be easily stated. A bad crop year, in which Pakistan's output of jute or cotton declines relatively more than that of other countries, will always lead to a fall in export earnings unless world prices rise proportionately more than world output falls. Export earnings may decline even if world prices are very responsive. They are more likely to decline for goods in whose market Pakistan plays a small part (cotton) than for those in which Pakistan is an important producer (jute).

In short, it is less likely that bad crop years will be accompanied by a fall in jute earnings abroad than a fall in other export proceeds. There might, however, be a tendency for the exports of cotton (and its manufactures) and tea to rise, despite any fall in their output, as a result of a smaller domestic demand for these items. It is impossible to determine, either on *a priori* grounds or by examination of Pakistan's trade statistics over the turbulent 1950's, whether export earnings will, on balance, tend to rise or fall during bad crop years.

Imports into Pakistan cannot, in a given year, change much unless import licences expire unutilized (very unlikely) or the government draws down foreign-exchange balances in order to import foodstuffs[17]. This would, of course, keep down the extent of the food-price rise, but only at

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[16]Let p be the price of jute (considered a homogeneous product for simplicity), X_p be Pakistan's output of jute and X_0 the output of the rest of the world. The foreign-exchange earnings from jute (R), if all jute is sold abroad, are:

$$R = pX_p \qquad \text{(III-1}$$

If no decline in R is to occur when X_p declines, then

$$\frac{\Delta X_0 / X_0}{\Delta X_p / X_p} > -\frac{1}{a} - \frac{X_p}{X_0}\left[\frac{1+a}{a}\right] \qquad \text{(III-2}$$

where (a) is written for $\dfrac{\Delta p/p}{\Delta x/x}$ and $X = X_0 + X_p$. Condition (III-2) is more likely to be fulfilled the larger is (a) (in absolute value) and/or the larger is

$$\left[\frac{\Delta X_0/X_0}{\Delta X_p/X_p}\right].$$

[17]While the majority of Pakistan's food imports over 1955/56 to 1959/60 involved no foreign exchange, 812 million rupees (of the total 2,330 million rupees of food imports) represented a direct charge on Pakistan's foreign-exchange balances (*see* [7, p. 29]).

the expense of an unfavourable turn in the foreign balance on current account. Abstracting from the extraneous shocks to which Pakistan's foreign trade seems particularly prone, we may conclude that the only clear effect of crop failure upon the balance of payments will be to raise imports to the extent that the government chooses to alleviate the high food prices. But this is more a dilemma than a choice: higher imports this year may reduce the rise in food prices, but the resulting lower imports next year (to restore foreign-exchange holdings) increase the likelihood that the price rise will be permanent[18].

IV

The governments' (central and provincial) budgetary position is certainly not unaffected by the country's food position. Unfortunately, the effects cannot be seen from historical analysis because the years of bad crops in Pakistan have always been years of other unusual circumstances. But *a priori* thinking suffices to indicate that at such times tax revenues will not increase and the government's expenditures will not decline — from inadequate food supplies may follow both physical pain and fiscal grief.

The only source of government revenue that might increase when crops fail is the personal income tax[19], for the relatively rich (the only ones who pay such taxes) are most probably the sole gainers from the rise in food prices (Section I). Corporate profits and net revenues from government enterprise will not rise and may decline (Section II). For the same reasons, those goods which carry sales and excise taxes will not sell either in greater quantity or at higher price. Land revenues can only decline through suspensions and remissions in particularly distressed farm regions. Finally, taxes on exports will also fall, even if export *earnings* should rise, inasmuch as such taxes are generally applied per quantity to agricultural exports; the volume of jute and cotton produced will be reduced by the very factors which damaged food crops (Section I). The tendency is surely towards a decline in government revenues.

Presumably, the government's expenditures are much less variable than its revenues, once the budget has been established. While this has, in fact, proven to be true over the 1950's in Pakistan [14] nevertheless expenditures have often deviated substantially from budgeted estimates. To the extent that the government is food buyer domestically, it has not purchased at market prices and, hence, its expenditures here are insulated from the food-price increases during poor crop years. But price rises (or increased shor-

18As will be seen in Section VII.

19And, for the same reasons, the agricultural income tax; but this latter is a very minor source of revenue.

tages) of manufactured goods do generally force delays, underprocurement, and rebudgeting. Since, in years of bad crops, these prices (or shortages) will be less likely to be increasing, the most important factor which tends to keep actual government expenditures below budgeted levels is absent. To the extent that the government institutes food procurement schemes (either domestic or foreign) which operate at a loss (as opposed to the only other feasible alternative, break-even[20]), expenditures rise above budgeted amounts. Any relief to rural areas, particularly hard hit by the failure of crops, will mean further unexpected expenditures by the government.

The Pakistan money supply is approximately equal to the sum of foreign-exchange balances, government securities and bank advances less time deposits. When crops fail, there may be a tendency for foreign balances to decline and government securities (because of an increased deficit) to rise. Time deposits will probably decline, at least relative to demand deposits, as consumers mobilize their wealth in defence of their food consumption[21]. Bank advances to the private sector may also fall. Thus, the change in the money supply may temporarily be positive or negative; but any tendency for the money supply to contract (or grow less rapidly than usual) is strictly a short-run influence (*see* Section IX). The ultimate effects of crop failure on

20"In the implementation of price policies, stress has been laid. . . . on measures likely to entail the least cost to the treasury. . . Nevertheless, government price policies for foodgrains and certain other crops have often given rise to heavy financial burdens in the form of food subsidies or government trading losses" [16, p. 9]. A footnote notes that the "disguised subsidy" on food was 92 million rupees in Pakistan in 1956.

21There is some evidence of this in Pakistan over the 1950's. Because the ratio of time deposits to demand deposits has risen so greatly over the decade, the relation between the annual rate of change of this ratio and crop size is examined. The percentage rates of change of the ratio of time-to-demand deposits (end of December figures) over the twelve years, 1950 through 1961, are: +6, —6, +11, +12, +40, —5, —2, +4, +3, +26, +10, +9. The indices of food-crop size are given in footnote 5 with the addition of 1949/50=99 and 1960/61=113. Assuming that food crops affect the deposit ratio with about a six-month lag (the food "year" is July-June), neglecting 1959 when time deposits rose rapidly for extraordinary reasons, and dividing the two sets of figures arbitrarily into highs and lows, we form the following table:

Change of time-demand deposit ratio	Crop Size: Low	Crop Size: High
Low	5	1
High	2	3

Other divisions between high and low lead to less spectacular tables, but this at least suggests a positive relationship between crop success and time-deposit growth. It is notable that the exceptions to this generalization are usually the years when prices rose little in the face of bad crops (or fell little in the face of good ones). This strengthens the conclusion that bad crops *plus* food-price rises will reduce the public's desire for time deposits.

the money supply will there be seen to be much clearer than the immediate effects.

V

So far, the analysis has been of the initial reactions of the economy to a decline in food production. In the remainder of this paper, we shall be concerned with the *secondary* reactions, namely, those which begin to occur some time after the bad food crop. And the basic question is: what are the irreversible changes caused by the bad crop (such that a subsequent normal or above-normal crop cannot return the economy to its original state)?

The wage structure is the most critical place where such irreversible changes may occur. In most underdeveloped and underemployed economies, the wage of basic, unskilled jobs is determined to only a slight degree by the strictly economic forces of supply and demand. The "floor" wage (possibly a truly subsistence wage) is a political and sociological affair. To the extent that workers have political influence and that public philosophy is concerned with the welfare of the working class, rises in the cost of living will be translated, belatedly and perhaps incompletely, into rises in wages. How belated and how incomplete is this relationship is an empirical question.

The level of money wages is an outstanding example of irreversibility in Pakistan although the reasons for this attribute are clearly not the same as in more successfully unionized economies. A rise in wages, once achieved through this socio-political process, is almost impossible to reverse — this is undoubtedly the reason why "pay commissions" generally delay, not decide, especially in the face of price movements which the government still hopes to reverse. If the rise in food prices in one year leads to any rise in wages in the succeeding years (even if all other influences return to their previous "normal" states), the economy can avoid, only with great difficulty, a permanently higher price level.

In Pakistan, the ability of workers to maintain real wages in the face of extensive price rises is not fully recognized. It is often said that *money* wages have remained nearly constant during the 1950's[22] while, in fact, *real* wages have remained far more stable. In Karachi, the index of money wages rose by 48 per cent over 1952-60 and 21 per cent over 1955-60, while the index of real wages increased by 18 per cent over 1952-60 and remained the same over 1955-60 [4, Appendix A]. It is impossible to deny, for Karachi at least, the closeness of the movements of cost of living and money wages over the past ten years.

22For example, the *Second Fife-Year Plan* commits this error: "In fact, the average money wage rate seems to have stood constant around Rs. 1,000 per annum in recent years" [10, p. 60].

The retaliatory influence of wages upon prices is two-fold. The first (to be discussed in Section IV) is that the money wage level determines money incomes in a large part of the economy and this in turn affects not only the extent of consumption demand but also its composition. The second influence (to be discussed in Section VIII) is upon costs in manufacturing industries. Usually, it is in the context of the secular effects upon development effort that these two influences of money wage levels are discussed. Part of the purpose of the next sections is to indicate that the short-run effects may also be significant.

VI

When a more-nearly-normal or above-normal crop year follows a bad one, prices of foods will fall again. The extent of the decline and whether food prices will return to their previous level are difficult questions which will for the movement be avoided. It is sufficient to assume a decline from the heights attained in the year of poor crops. Then those very groups which suffered loss (in the sense of being incapable of consuming as much of each goods as before) will gain somewhat once normal crops reappear. The urban worker finds the crack in his tea-cup closed by higher money wages and lower food prices; and the low-income farmer who was hurt by the poor crop will gain by the good one (for the same reasons, *mutatis mutandis*, as discussed in Section I). Most of those who lost in the bad crop year will at least begin to return to their earlier economic welfare position.

Let us consider only the person who is now capable once again of consuming exactly that bundle of goods which he consumed in the year preceding the crop failure (*i.e.*, his consumption bundle of two years ago). Will he, in fact, return to that consumption pattern immediately? There are good reasons for thinking he will *not*.

When expenditures must be reduced in low-income groups, it is probable that food consumption will be cut to a much lesser extent than manufactured items (Section II). But whatever reduction in food that does occur is irretrievably lost. It is obvious, but not trivial, to note that one cannot overcome last year's hunger by overeating this year. To a great extent, this is also true of manufactured items. There is no perfect symmetry, however, simply because many important manufactured articles are, unlike food, somewhat durable — such things as footwear, clothing, cooking utensils, bicycles, and blankets are consumed over a longer period than a year. Since these are the very items whose purchase is most drastically reduced in the year of food shortage, household stocks are, in the following year, abnormally low. While one cannot overcome last year's cold winter with a new blanket this year, a greater-than-usual expenditure on blankets is required if *this year's* winter is to be effectively weathered.

This is more than just a high income elasticity for semi-durable manufactured goods. There is a back-logged demand which will probably be satisfied even though it means an expenditure elasticity for such items *greater* than that of two years ago *(i.e.,* before the bad crop). Even if real income rises this year to its level of two years ago, food consumption will probably not rise immediately to its previous level but will remain somewhat depressed (relative to two years ago but not, of course, the last year) in order to permit satisfaction of accumulated demands for semi-durable manufactures.

Were other factors conveniently to remain equal (to two years ago), we should, therefore, expect food prices to be now below those prevailing with the same-size crop two years ago. Other factors, however, will not have remained equal. Some groups gained during the bad crop year and have probably expanded their demand, at least temporarily, for food as well as other items. Workers' wages will be higher now. And there are other forces, still to be discussed, which either expand aggregate (and hence food) demand or increase the scarcity (or price) of goods substitutable to food. A *ceteris paribus* prediction of a lower (than two years ago) food price in the year following bad crops would be a dangerous one.

Far less dangerous is the conclusion that demand for manufactured items on the part of low-income groups will be abnormally high in the year following a food crop failure. But low-income groups contribute only a portion of the demand for manufactured goods; before making assertions about the *total* demand for such items, we should look at the demand of those with higher incomes. These can conveniently be divided into two groups for present purposes: 1) high-income farmers and certain landlords, middlemen, *etc.,* whose real incomes rose in the year of bad crops; and 2) high-income urban groups whose incomes suffered either slightly (because their food consumption was low relative to their unchanged incomes) or significantly (because their incomes were derived from the lower profits of manufacturing) in the bad crop year.

For both of these high-income groups, the consumption analysis of developed economies is probably applicable. A generally accepted proposition resulting from both theoretical and econometric work is that a consumer will alter his total consumption only gradually in the face of changes in his income. Furthermore, the pattern of his consumption will be altered only gradually as relative prices change. For these reasons, it is unlikely that serious change in consumption, either the total or the composition, will take place among high-income groups either in the year of bad crops or the following year. There will be slight increases in consumption by the high-income gainers and slight decreases by the losers.

It is unlikely that the behaviour of high-income groups will alter the earlier conclusion that demand for domestic manufactured articles will rise above the level of the year preceding the crop failure in the year following it. Larger stocks of such items than the manufacturers desire *may* have been accumulated during the year of high food prices (*see* Section II), and a reduction of these excess inventories may alleviate, at first, the inflationary demand pressures on prices of manufactured goods. Whether such additional stocks (if they exist) will be adequate to satisfy all the back-logged demand is an empirical question; if large stocks did accumulate, it is *possible* that the demand pressures might be avoided.

The effect of this increased demand upon prices is a question of importance in an economy where price rises usually occur for demand reasons. There are strong indications that this will hereafter be the case in Pakistan. There would, however, be little use in seeking evidence from the 1950's when extensive price controls enforced legally the wide-spread philosophy that the reaping of profit in conditions of shortage is an immoral activity. Though this belief, which has survived the loss of its legal basis, may continue to deter manufacturers from raising prices in the face of increased demand, it will probably cease soon (if not already) to keep retail prices down.

It appears now, however, to be only a matter of time before the manufacturers of Pakistan assimilate the ways of their Western counterparts concerning the code of the administered price: raise prices whenever demand warrants and public opinion is not too hostile, and never lower prices. If and when this should occur, another irreversibility of bad crops will appear. Manufactured goods' prices may rise permanently in the year following bad crops simply because of a temporary spurt in demand. Should wages (and perhaps food prices) rise because of this, the spurt in demand may sustain itself.

VII

Before turning to the cost side of manufacturing, it is important to look briefly at the foreign sector. During a year of bad crops, the current-account balance may deteriorate (*see* Section III). This possibility warrants consideration. Where, as in Pakistan, the foreign-exchange balance is already low, not only can this not be allowed to continue but it must be reversed if an adequate reserve is to be prepared for the next crisis. Thus, the government must take measures either to expand exports or to restrict imports; the practical (and usual) choice is the latter.

Even though a "normal" crop year follows a bad one, there may have occurred an irreversible decline in foreign-exchange reserves; of course,

an exceptionally good year will occur eventually and reverse this loss, but few governments in underdeveloped economies can afford the risk involved in waiting for nature to repay her debt. There are ways to avoid an import contraction — the links are not inseparable. But where it is not avoided, it is another irreversible legacy of crop failure.

The reduction in imports may take place in luxury consumption items. This will at least partially lead to a reallocation of export bonus vouchers in this direction; the extent of such reallocation will depend upon the behaviour of high-income groups in the face of gains and losses during the bad crop year *(see* Section IV). Probably the reduction of availability of imported manufactured items for consumption would add somewhat to the demand for domestic manufactures. But such a conclusion is tenuous, for the two are far from perfect substitutes and may not be considered substitutes at all by many people.

The reduction of industrial imports, whether equipment or material, poses a frightening dilemma for government. Most Pakistani businessmen have shown great willingness to reinvest profits in capital equipment, but to ask them to wait longer for the requisite import licences is to invite them to consume their profits. To reduce raw-material imports means underutilization of already-imported scarce capital. Thus, if industrial imports are reduced, it is likely to cause: 1) a rise in demand for luxury consumption, domestic and foreign; and 2) a rise in the prices of industrial raw materials. The implications of the first have been discussed in the preceding section: new import constraints will probably further an already extent rise in demand for domestic manufactures. The second effect will be treated in the next section.

VIII

In Pakistan, domestic industrial prices have been determined much less by economic forces than by law and custom. During the 1950's, it has been considered anti-social, if not illegal, to raise price merely because of increased demand or inadequate supply. Thus, manufacturers are reluctant to alter prices in order overtly to augment profits[23]. Only when costs have risen, is there justification for a price rise; moreover, price increases are often requested, granted and executed following a rise in costs quite irrespective of the demand for the product. Of course, in an economy where excess demand exists for a great many products, demand need not be too carefully considered.

23Witness the events following decontrol of cloth prices. Even the mill-owners seemed to share the popular belief that decontrol would (or shoud) encourage greater output with *no* rise in prices. Indeed, the rise in prices following decontrol has been universally hailed as unfortunate, if not immoral.

The conclusion is that manufactured goods' prices will increase most readily in response to an increase in costs. And this is precisely the surest legacy to industry of the year of bad crops. Wages will rise (*see* Section V) and raw materials' prices — especially of those which are imported or are substitutes for imports[24] — may also rise (*see* Section VII). Either is sufficient to set in motion the mechanism of industrial price rises; the fact that demand is higher (in the year following crop failures) is an attractive, though unnecessary, fillip[25].

There are two further points to be noted. First, while the relationship between costs and prices is more mechanical in a regime of controlled prices, it exists quite as fully in economies where prices are uncontrolled. Second, this price increase is almost completely irreversible. It could be reversed, were costs or demand to decline sufficiently later; but (as we shall see) this is quite unlikely to occur. Thus, the economy is saddled, within a year or two of bad crops, with a new higher level of manufactured goods' prices.

IX

So far, the discussion has been conducted primarily in terms of relative price changes. The analysis may now be summarized and furthered by consideration of the general price level of the economy, the money supply and the income velocity of money. But one preliminary problem must be treated even before the crop failure and its concomitant chain of effects is introduced. This question is whether or not the economy, in the "normal" year preceding that of bad crops, is in a monetary "equilibrium". Certainly, in Pakistan, no equilibrium has existed in the 1950's in the sense of a stable outcome of completely free-market forces. Markets have generally not been free by any definition of that word; the question of equilibrium can only be considered within the context of the myriad of controls, ever changing but ever present. Monetary equilibrium here must mean that the individuals of the economy are *satisfied* with the cash balances that they are holding, given the prices and availabilities of the various commodities which might be purchased with these balances.

24Prices of raw material (other than imported or import substitutes) may increase, if: 1) the previous year's high food prices induce farm substitution of food crops for industrial raw material crops, or 2) the government raises its control price on such raw materials on grounds of equity to producers. An example of this latter influence is the controlled price of factory-delivered sugarcane which was raised, between 1955/56 and 1957/58, by 5 annas per maund (18 per cent) in East Pakistan and 4 annas per maund (17 per cent) in West Pakistan (and, of course, the price per maund of sugar, payable to the processing factory, rose by 2.78 rupees (8 per cent) in East Pakistan and 10.38 rupees (33 per cent) in West Pakistan over that period).

25Evidence of the lagged adjustment of prices of manufactured goods to those of foodgrains is found in [8, Section II]. 'The correlation of manufactured goods' prices is higher with the previous year's price index (or cereals' prices) than with the current year's; this fact suggests that change in food prices somehow causes change, in the same direction, of manufactured goods' prices in the following year.

It is sometimes stated that the existence of consumer price and quantity (*i.e.*, rationing) controls are basically inconsistent with monetary equilibrium. This is certainly true if there are not sufficient gray, or black markets to absorb any excess liquidity. If there are not, the amount of money (at least some) individuals hold will be larger than they desire relative to the level of their incomes. In other words, the income velocity of money will be lower (or the Cambridge real-money-balance k higher) than it would be in equilibrium. Many feel that this disequilibrium has generally existed in Pakistan in recent years, despite the presence of (legal and illegal) free-market outlets for excess funds.

Let us consider first the situation when (and if) such an artificially low income velocity exists. Such excessive liquidity is, by definition, a force that would cause a general rise of prices if it were permitted to manifest itself in this way. Thus, a crop failure and the subsequent rise in food prices provide an outlet for the release of the excess liquidity[26]. The ensuing rise in the prices of manufactured and imported goods merely provides a further vent for the liquidity. If the money supply is unchanged, some of the excess liquidity is finally removed by the very process that eliminates it in free-price economies — namely, higher prices. Income velocity is, in the end, higher and, hence, nearer its equilibrium value.

The more difficult, more interesting and more probable case is, however, that which assumes monetary equilibrium in the economy, at least initially. There is usually a sufficiently broad free market in foodstuffs to ensure that people need not, and hence will not, keep greater money balances than they desire — although their desired money balances may be larger in the presence of controls[27]. If equilibrium exists initially, the crop failure and subsequent events must disturb that equilibrium and force adjustments if it is to be reattained.

In the year of crop failure, the primary change in the economy is the rise in food prices. This usually means a change in the income velocity of money, although there may be no fundamental change in the equilibrium income velocity (or, in other words, in the *ultimately* desired real-money balances). It is, of course, possible that the velocity is affected by shifts in relative prices or expectations of general price rises; but the most probable

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[26]This begs the question of why the excess liquidity did not drive up food prices in the "normal" crop year. If one argues that there is excess liquidity, then (I think) one must also maintain that almost all prices are regulated—a great deal of money can flow through a very small opening if the pressure is great. Then, it must be argued (somehow) that the shortage of food induces a rise in the permitted food price.

[27]Especially if the controls are not expected to be permanent. For some speculations on this tricky subject, *see* [11, Pp. 43-46].

change is a rise in velocity[28] in the bad crop year because individuals prefer a lapse from long-run monetary equilibrium to an immediate (and hopefully short-lived) readjustment of their consumption habits. If this is so, then the rise in velocity is a temporary movement out of long-run equilibrium and not a shift in the equilibrium velocity. If relative price changes or expectations decrease the desired real-cash balances, then the situation is similar to the disequilibrium model previously discussed. A permanent rise in prices is always maintainable if the necessary rise in velocity is desired by the public. In India, it is frequently argued that food shortages raise velocities [13 ; 15]. This is probably so in the short run, but not at all comprehensible as a permanent effect. If the rise is not permanent, however, the problem of how the higher price level is to be maintained is still unsolved.

If the ultimately desired or long-run equilibrium velocity changes little, or not at all, as a result of the series of events following the crop failure, then one of the three things must eventually occur: 1) the general price level must not rise; 2) national income (in constant prices) must fall; or 3) the money supply must increase. Each of these possibilities will be discussed in turn.

Can the general price level return to that prevailing before the crop failure? We have already argued that there will have occurred an irrevocable rise in prices of manufactured goods accompanied by an equally irreversible rise in urban wages. Thus, as ultimately unchanged price level would require that food prices eventually fall *below* those preceding the crop failure. Little analysis is needed to see that this is implausible; only a curious combination of reduced urban demand and increased farm marketings could

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[28]The statement requires some support, for the evidence of the 1950's in Pakistan shows that income velocity has not always risen in years of food shortages. The historical uncertainty follows from the facts that the money supply and nonagricultural output have not always remained constant and that there have been secular movements in the income velocity. Nevertheless, the evidence is clearer than it at first appears. If we divide the ten crop years, 1949/50 through 1958/59, into five good (G) and five bad (B) years (on the basis of the food-crop production index of the CSO, (*see* footnote 5), they run G, G, B, B, G, B, B, G, G, B. If we divide the income-velocity movements over ten years, 1950/51 through 1959/60, into up (U) years and down (D) years[11, Appendix 1], they run D, D, U, D, D, D, U, D, D, U. Allowing a one-year lag between crop size and its effects upon income velocity, we form the following table.

		Income Velocity	
		Up	Down
Crop Size	Good	0	5
	Bad	3	2

With so few observations, Chi-Square testing is inapplicable; but more casual analysis indicates that bad crops are more likely to be accompanied by velocity rises and good crops by velocity falls than the reverse.

cause such a result, and there is no reason for suspecting their occurrence. When normal crops once again reappear, the relative prices of food and manufacturers will certainly resemble those prevailing before the crop failure.

Can there be a decline in the aggregate output (*i.e.*, constant price national income) of the economy — or, more accurately, in the supply of goods which enter the monetized sector? This would imply that either the farmers market a smaller fraction of their output or the production of manufactured items declines. Without change in relative prices, the first is unlikely. The second is certainly a possibility, and some economists have observed the phenomenon of generally rising prices and over-production of manufactured items in underdeveloped countries[29]. While such a situation is a distinct theoretical possibility, it does not seem to have occurred in Pakistan, at least as yet[30]. Rather than speculate on its possible future occurrence, it is perhaps wiser to consider the third possibility, that of a rise in the money supply—for this is the manner in which higher price levels have proved maintainable in the past.

Can the money supply expand to accommodate higher prices? Here we at last arrive at the crux of the difference of opinion between laymen and economists on the subject of food prices and inflation. Traditionally, almost reverently, economic theory likes to consider money an exogenous variable, determined by the policies of the central bank; overall price levels are in turn determined (at least in part) by this money supply. To suggest a reversal of this causation may seem heresy, and yet this is what is usually done—implicitly to be sure—when food shortages are said to "cause" inflation[31]. The answer lies in the fact that control of the size of the money supply is a power always held by governments but not always exercised by them. In Pakistan, the Central Government, with the cooperation of the State Bank, has diligently pursued a policy of not controlling the money supply. The money supply is indeed dependent upon foreign-

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29"The paths of inflation [followed by developed and underdeveloped economies] actually diverge when one comes to disaggregation of the demand for consumer goods ... We find a paradoxical situation wherein sagging markets in industrial consumption goods coexist with buoyant markets for food... Demand for food ... was almost rising faster than the annual rise in money incomes. This meant that a portion of income which was previously spent on other goods was now diverted to food. This was why the demand for cloth slackened of late leading to the accumulation of stocks, while at the same time, inflationary pressure on food was accentuated" [6, Pp. 364-365 and 369].

30This absence might be interpreted as evidence that the Pakistan economy has generally operated under conditions of suppressed inflation, with the excess demand for manufactures thwarted by price controls. What would appear as over-production in a free-price economy would, under these conditions, merely reduce the extent of unsatisfied excess demand. The recent removal of price controls would provide, in such a situation, an ultimate restriant against price increases by introducing the potential sanction of declining sales. On the imminence of this possibility in Pakistan today, *see* the speech of S. A. Hasnie, Governor of the State Bank of Pakistan, at its Annual General Meeting, September 8, 1961.

31Unless it is simultaneously maintained that economy was previously being forced to hold undesired liquidity or that the food shortage somehow causes a rise in the equilibrium income velocity.

exchange reserves and the government indebtedness but it also depends upon the amount of private advances the banks wish to make [3, Appendix E].

In a period of higher prices, bank customers can easily expand their borrowings. This they will do as long as the money supply is inadequate to meet the public demand for real cash balances. Of course, not everyone qualifies for bank credit, but those who do can, and will, increase their borrowings until sufficient new money is created to bring the actual income velocity down (or the propensity to hold real cash balances up) to its equilibrium value. The process by which the bank borrowings of the few become thec ash balances of the many is well known, and it operates with little less vigour in underdeveloped economies. For both individuals and business firms, inadequate real-money balances can be supplemented either by increased saving (which would make the higher price level ultimately untenable) or by increasing the time between receipt of goods and payment for them (which eventually requires increased bank credit). In Pakistan, the commercial banks have been quite prepared to meet any demands for credit [3, Pp. 19-23]. The State Bank has never seriously opposed such an expansion.

Alternatively, this tendency for the money supply to grow through private credit might be offset by a reduction in government indebtedness[32]. Precisely the opposite occurred in the face of a growing money supply and rising prices in the years 1955-58. The inelasticity of tax revenues and the government's desire to avoid declining real expenditure meant that deficits rose, not fell, in these years; the government deficit only furthered the potential expansion of the money supply. The total government borrowing from banks did decline in 1959/60, and hence did provide a contractionary tendency to money-supply growth—nevertheless, the money supply increased, apparently without much strain on bankers' prudence or ingenuity, by 5.3 per cent in that year (June 1959-June 1960; the increase between Decembers was slightly larger).

Lest this policy of passivity by the State Bank seem foolishly shortsighted, we might consider the alternatives to money-supply expansion. The obvious alternative is a forcing down of prices to their earlier levels; this may be achievable, but only at the expense of at least temporarily idle industrial capacity. Conservatives may cry that price rises tend to reduce growth rates, but it will always be more obvious that idled capacity *is* a reduced growth rate. There is, however, a more frightening alternative than recession. For rural groups, there is an obvious and readily available

[32]Or in foreign-exchange reserves. This latter offset to monetary expansion occurred in the early 1950's, but reserves are now not large enough to permit consideration of significant further reductions.

substitute for money, namely, foodgrains. Cereal balances are as good a reserve as cash balances and may be increasingly used if the money supply does not expand[33]. In a developing economy, it is certainly monetization and not its opposite that the central bank must encourage. It is probably true that inflation discourages monetization; it is certainly true that lack of money discourages it.

Keynes discovered that in developed economies there were substitute liquid assets to money and that their prices (and yields) could seriously affect the velocity of money (or desired real-money balances). While the substitute assets are different in an underdeveloped economy, faith in a constant income velocity of money is liable to equally great disillusionment.

X

Inasmuch as the money supply can easily grow to meet the higher (after-price rises) cash-balance demands of the public, there is no need to argue that velocity (equilibrium or not) rises with the higher prices. The new, irreversibly higher price level can just as easily, and more plausibly, be maintained by means of an expanded money supply. The crops fail and then return to normal—but their legacy remains, a chain of reactions which lead to a permanently higher price level in the economy. If crop failure is a periodically recurring phenomenon, one price push may still be working its effects when the next is begun. The demand-inflation possibilities of over-ambitious investment plans not only may exist simultaneously with crop-push inflation, but may even be induced by it as the Government seeks desperately to avoid a decline in the real size of its expenditure (while being unable to increase tax revenues).

Some of the relationships discussed in this paper are no more than hypotheses and speculations. Empirical work is required to verify their existence and estimate their quantitative importance. Such investigation will be made difficult and tenuous by the entangled economic past of Pakistan—the separation of the effects of bad crops from those of the collapse of the Korean boom, the Plans, and the devaluation may prove impossible. It is hoped that these suggestions are of value in themselves, but they depend ultimately upon factual knowledge.

The lesson of this paper is, however, clear even if some of the hypothesized relationships are unsure as to existence or importance. Stabilization of food prices is a prerequisite to price stabilization. It is certainly a necessary condition, and very probably a sufficient condition as well. Adequate stocks

33For a full discussion of this possibility, *see* [12].

and stable expanding sources of supply of foodstuffs are essential if Pakistan's development is not to be periodically marred by serious rises in prices. Such rises are awkward and inequitable in the short-run; they may be devasting to economic growth in the long-run, for they have not even the rationale of demand inflation that investment may be thereby encouraged[34].

Once this crop-push inflation is controlled, traditional excess-demand inflation can more easily be isolated and handled. The fact that the money supply expands after a crop failure may now create confusion between the two causes of price rises. While it has been argued (Section IX) that price increases can encourage increases in the money supply, it is still as always true that money supply increases through deficit financing can lead to price rises. The purpose of this paper is not to suggest neglect of demand inflation but to encourage recognition of the serious, irreversible influences of crop shortages and food price rises upon the general price level.

[34]Consideration of food-price stabilization by means of price controls is beyond the scope of this paper, but two questions may be asked of Pakistan's experience with such controls in the 1950's: 1) was not the attempted cure worse than the disease? and 2) was a cure provided? The data on food prices, production and marketings at times of controls are sufficiently unreliable that no clear answer can be given even to the latter (simpler) question. We must be especially skeptical of government-collected "price" data whenever there are extensive government procurement, rationing, and price-control schemes. And yet we must know much about the behaviour of free and/or blackmarket prices (and their effect upon procurements) if we are to discover if the "average" food price is lower with or without controls.

REFERENCES

1. Clark, R., "The Economic Determinants of Jute Production", *FAO Monthly Bulletin of Agricultural Economics and Statistics*, September 1957.

2. Darling, M., *The Punjab Peasant in Prosperity and Debt.* (Oxford: Oxford University Press, 1925).

3. Haq, M., *Deficit Financing in Pakistan*, 1951-60. (Karachi: Pakistan Institute of Development Economics, February 1961).

4. Khan, Azizur Rahman, *Wages and Prices in Karachi.* (Karachi: Pakistan Institute of Development Economics, October 1961).

5. Khan, S. U. and R. A. Khan, "A Note on Wholesale Prices, 1960/61", *Pakistan Development Review*, Vol. I, No. 3, Winter 1961.

6. Khatkhate, D. R., "The Impact of Inflation on India's Economic Development", *Economic Development and Cultural Change,* April 1959.

7. Pakistan, Food and Agricultural Commission, *Report.* (Karachi: Manager of Publications, November 1960).

8. Pakistan Institute of Development Economics, *A Measure of Inflation in Pakistan,* 1951-60. (Karachi: PIDE, March 1961).

9. Pakistan, Ministry of Finance, *Budget,* 1961-62: *Economic Survey and Statistics.* (Karachi: Manager of Publications, 1962). 3

10. Pakistan, Planning Commission, *The Second Five-YearPlan.* (Karachi: Manager of Publications, June 1960)

11. Porter, R. C., "Income Velocity and Pakistan's Second Plan", *Pakistan Development Review,* Vol. I, No. 2, Autumn 1961.

12. Porter, R. C., "The Dangers of Monetary Policy in Agrarian Economies", *Pakistan Development Review,* Vol. I, No. 3, Winter 1961.

13. Sachi, S., "A Basic Fallacy in Planning Commission's Appraisal", *Economic Weekly.* (Bombay: May 17, 1958).

14. Sarfraz, Nighat, *Problems of Budgetary Reform in Pakistan.* (Karachi: Pakistan Institute of Development Economics, October 1961).

15. Shenoy, D., "Inflation of Import Surplus," *Economic Weekly* (Bombay: June 21, 1958).

16. United Nations, Economic Commission for Asia and Par East, *Food and Agricultural Price Policies in Asia and the Far East.* (Bangkok: ECAFE, 1958).