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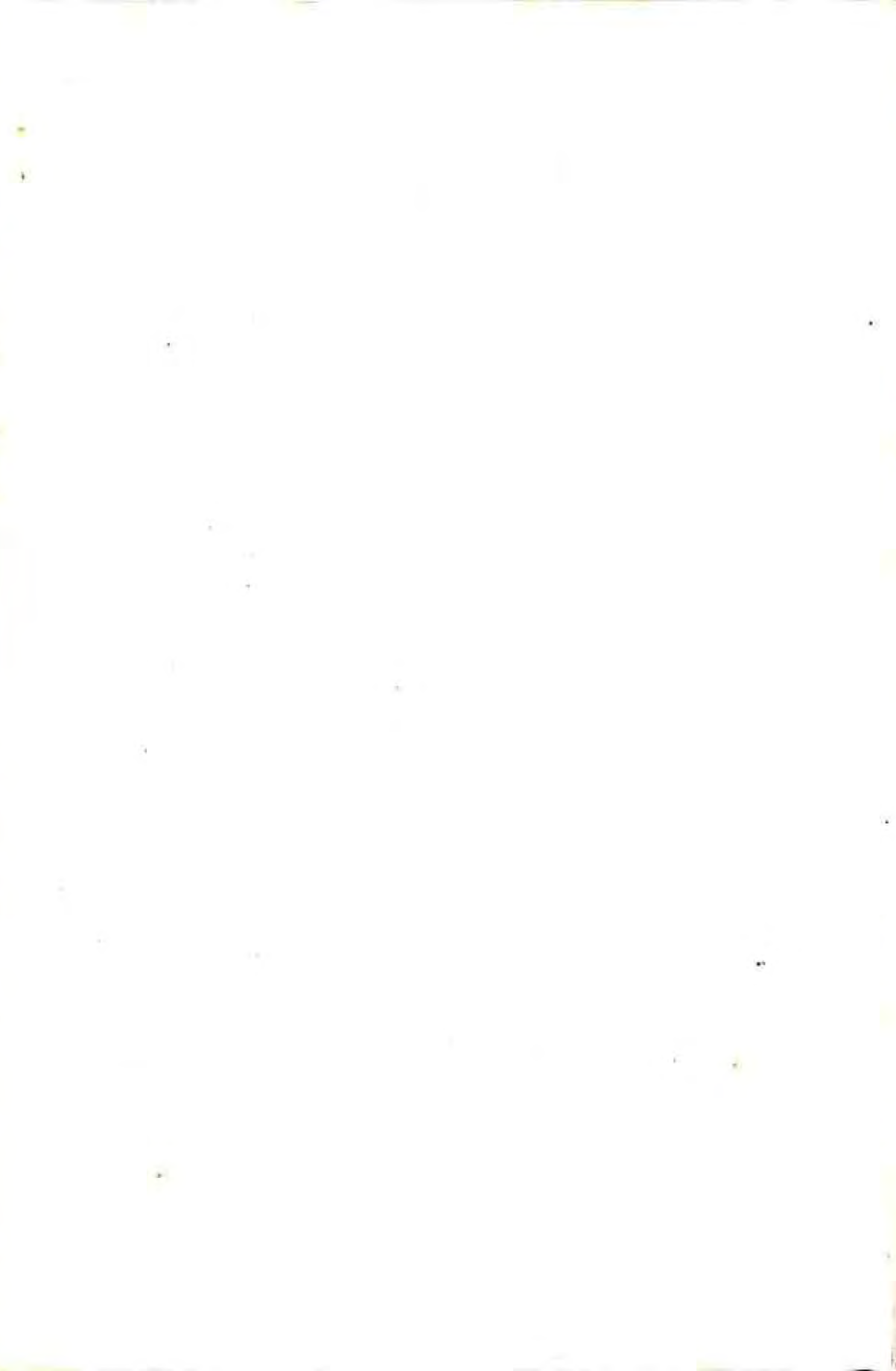
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THE EGYPTIAN INCOME TAX REFORM : TOWARD A UNITARY INCOME TAX

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The aim of this note is to (1) summarize the recent efforts contemplated by the Egyptian authorities to reform the current income taxes, (2) identify the problems and issues that would arise in connection with adopting a unitary income tax, and (3) outline the statistical studies that are needed to initiate such a reform.

I. Recent Attempts to Reform Income Taxes

2. Following the 1973 open door policy which has come to be the core of the Egyptian economic policy, the need for a comprehensive tax reform became urgent and of paramount importance. The shift from the nationalization of major and medium-sized enterprises which dominated the economic scene from 1957-1971, to the promotion of private investment and the encouragement of the flow of Arab and foreign capital has reinforced the case for such a reform. Tax exemptions and other concessions as offered by Law No. 43/74 need to be coordinated with the country's tax policy, otherwise the objective of these incentives may not be fully attained.

3 Over the last three years, the Ministry of Finance has contemplated considerable efforts to reform the income tax system which goes back to 1939. The system consists of a number of schedular taxes, levied on different categories of incomes with different personal exemptions and rates. In 1949, a complementary tax on individuals' global income was introduced to improve

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the overall incidence of the tax system. Over the last 40 years, many changes were introduced on an *ad hoc* basis, adding unnecessary complexity, increasing anomalies, and pushing the combined rates of the schedular and complementary taxes to unbearable levels. The tax burden has become excessively high on those who invest, produce, and, in some cases, work in the private sector.

4. The Ministry of Finance's efforts to reform resulted in three principal bills. The first bill, which consisted of 174 articles, was submitted to the People's Assembly on June 5, 1977. The principal proposed changes included the consolidation of the many amendments introduced over the last 40 years, and a separate tax on corporations. The bill, despite being approved by the Planning and Budget Committee of the Assembly, with some revisions, was not passed.

5. Following the difficulties in passing the 174 article bill, the "Tax Justice Bill", was proposed by a joint committee, the members of which were drawn from the Economic Affairs and Planning and Budget Committees. This bill of 50 articles was passed by the Assembly but was vetoed by the President on the grounds that (a) it did not achieve adequate "tax justice", and (b) the proposed changes were partial leaving the tax structure virtually unchanged. The President called for a comprehensive reform to cover all direct and indirect taxes and to be coordinated with the country's monetary, expenditure, pricing, and income policies.

6. To comply with Article 113 of the Constitution, a third bill was proposed on June 8, 1978 to account for the President's objections. It carried over most of the proposals of the previous two bills but regarding the complementary tax, it incorporated a number of heterogeneous measures that are inconsistent with the nature of this tax. These measures included taxing some services under a new tax, "tax on conspicuous consumption," such as some first class hotel services, first class air travel, motor vehicles in excess of the first family car The outcome of this bill has yet to be decided.

7. The three bills, despite differences in scope and coverage, share virtually the same broad objectives. They follow, to a large extent, the same approach and certainly are subject to the

same limitations and shortcomings. Despite some differences in the phraseology, the three bills emphasize as goals (1) greater "tax justice" in conformity with the principle of ability to pay, (2) larger incentives to save and invest and to encourage the flow of foreign and Arab capital, (3) broadening the aggregate tax base by taxing gains from "occasional transactions" and profits from some activities that are currently exempt, and (4) improving tax administration and facilitating the procedures of assessment and collection through enforcing information returns and withholding profits taxes from purchases, contracts, and transactions with the public sector. While agreement can be easily reached regarding the importance of these goals, differences of opinion will emerge as greater precision is given to their meaning and formulation. These differences become more complicated when it comes to selecting the appropriate means, as turned out to be the case under the three bills.

8. To achieve greater tax justice in the distribution of the tax burden, emphasis was placed on the personal exemptions accorded under some schedular taxes, and on the rate schedule of the complementary income tax. The minimum personal exemption which is vanishing under the commercial profits and continuing for wage earners, was raised under the 174 article bill to L.E. 500 and under the tax justice bill to L.E. 600. The three bills left the rates unchanged without acknowledging that progressivity and consequently equity can hardly be improved or effected through personal exemptions only. The three factors that usually influence the income tax burden are personal exemptions, graduated rates, and in countries like Egypt, differentiation according to source of income. The concentration on one instrument of tax progressivity (personal exemptions) resulted in applying extremely low rates of some schedular taxes to small initial taxable brackets, but with relatively large personal exemptions. Under such arrangements slow progressivity would emerge with negligible revenue to be raised from the initial brackets, which can hardly justify the administrative task and taxpayers' compliance.

9. The three bills recognized the need to reduce the steep progressivity of the complementary tax, the rates of which were pushed over the last 30 years to unreasonably high levels. The top marginal rate would be reduced from 95 per cent of income

in excess of L.E. 10,000 to 80 per cent of income over L.E. 100,000. The size of taxable brackets would be broadened to mitigate the tax burden. Although these measures are in the right direction, the proposed rate scale remains influenced by the myth of progressivity that led to the 95 per cent marginal rate, and without realizing that the effective progressivity will not reflect such high nominal rates on income and profits. To encourage savings and investments, specified investments, within stipulated limits, would be allowed from the adjusted gross income of the complementary tax. Investment in approved enterprises and government bonds will be deducted within a maximum of 25 per cent of gross income or L.E. 3,000, whichever is less. As this measure would be practised by taxpayers in high brackets it could have undesirable effects on the distribution of the tax burden. Further reductions in the progressive rates seem to be a better substitute for such selective deductions. Under the three bills, raising revenue from taxes on income and profits does not seem to be among the principle goals to be attained. The 174 article bill explicitly stated that the contemplated reform would result in a revenue loss of L.E. 32 million, while the other two bills remained silent on the issue of revenue.

10. The reform sought by the three bills remains partial within the schedular tax system, but it was agreed that the forthcoming reform will introduce a unitary tax on individual's global income, coupled with a separate tax on corporations. The first bill proposed a separate corporation tax, as a step toward the unitary income tax. A separate tax on corporations having the same rate as applied to individuals can hardly be viewed as a step in this direction. Splitting the provisions of the schedular taxes on commercial profits and on income from movable capital and their consolidation in a separate tax, as it is the case under the first bill, has little bearing on the problems that usually arise in connection with adopting a unitary income tax. The complicated issues of coordinating corporate profits taxation with that of individual income were not tackled. Corporations would have continued to be treated with no changes in rates, treatment of distributed and undistributed profits, taxation of dividends in the hands of shareholders, etc.

11. Another significant defect of the proposed corporation tax would have been the elimination of withholding the tax on

income from movable capital from corporate distributions. This is in contrast to the experience of some developed and developing countries that adopted the unitary tax system. Under the 1959 French tax reform that introduced the unitary income tax, withholding 20 per cent of dividends with a credit to shareholders, continued until 1965. The 1972 Italian reform allows withholding at source 10 per cent from all dividends received by individuals or corporations resident or nonresident. The same principle was maintained in the reforms of the People's Republic of the Congo and Chad — the two developing countries that recently adopted the unitary income tax system.

12. Despite the considerable similarity of the three bills and the short time over which they were prepared, some contradictory measures were proposed especially in connection with taxation of capital gains and income from some activities such as cattle breeding, fruit growing, and flower gardening. While agricultural profits will remain exempt, it was proposed to tax some profits from such closely related activities on different bases and estimates. The changeable policy position was also evident regarding capital gains taxation. Under the first bill, all gains would have been treated as ordinary income subject to both schedular and complementary taxes, irrespective of their nature. Under the two other bills, only capital gains in excess of L.E. 10,000 will be taxed. The schedular tax on these gains will be determined on a *forfait* basis and would be equivalent to the registration fees. The corresponding gain will be included in the complementary tax base. The continuing changeable policy position as related to taxable transactions, determining the bases, or personal exemptions, confirms the need to state clearly the recommended policy measures and the details of the reform. The failure to consolidate the additional taxes into the principal schedular taxes is another indication of lacking a comprehensive direction. The first step before adopting a unitary income tax should have been the consolidation of the many taxes levied on the same income schedule. If it was hard for one reason or another to consolidate these taxes, it will certainly be much harder, all things being equal, to establish a meaningful unified graduated rate. The discussions and studies undertaken in the Ministry and the National Council of Production and Economic Affairs recommended adopting a unitary tax by 1980. Very

little seems, however, to have been done toward identifying the issues to be tackled under such a reform, reaching a policy position on the contemplated changes, and quantifying the probable effects of such changes on the tax burden according to the different sources of income, revenue yield, and administrative capabilities.

13. The nonenactment of the first two bills and the uncertainty about the fate of the third should offer the opportunity to establish a comprehensive approach for the forthcoming structural reform that requires substantial administrative changes and could result in revenue losses or unsought increases in the tax burden. Fixing a time limit without adequate consideration to the many phases of the reform, and the various studies that are essential will result in preparing still other bills. The major limitation of the three bills stems from the lack of statistical studies on the basis of which the suggested reform can be evaluated. These studies are rare and at best incomplete. In the process of preparing the three bills, considerable emphasis has been given to the legal aspects and codification. The outcome of such an approach at such an early stage in the reform process has been consolidating some provisions and improving the phraseology of some articles but without dealing with the real problems and, needless to say, tackling the heart of the reform.

14. The sought reform can be divided into a number of phases and the success of each phase should determine the outcome of the following phase and consequently the entire reform. Under such an approach, it would be essential to (1) identify the principal issues that bear directly on transforming the scholastic system into a unitary one, (b) prepare the necessary statistical studies, (c) formulate alternative recommendations and reach policy positions, and (d) once the issues are identified and the recommendations are reached the final stage of drafting a statute incorporating the reform can be pursued. Although this approach may appear to be time consuming in producing and analyzing data, it remains safer and more efficient than the procedures that have been followed and brought about negligible results. The same experience is about to repeat itself with a renewed emphasis on drafting another corporation tax law irrespective of the individual income tax changes to be introduced.

II. Problems and Issues Involved in Adopting the Unitary Tax

15. The decision to introduce the unitary tax is in conformity with the growing trend among countries with schedular tax systems that have followed the 1948 French income tax reform. Before implementing this decision, it is essential, however, to undertake a comprehensive analysis to assess its possible advantages and shortcomings. Such analysis would shed necessary light on the defects of the current income tax system. It may lead to recommendations that rationalize the system and improve the administrative procedures before adopting the unitary tax as a means to progress. Unless the defects of the present system are removed and its inconsistencies are eliminated or reduced, the forthcoming reform based on a unitary tax can hardly be justified.

16. The advantages of the unitary income tax have been stated through the literature of public finance and are well known in countries with schedular tax systems. In Egypt, the issue of schedular income taxes vis-a-vis the unitary tax has its own interesting history that goes back to the enactment of the schedular taxes in 1939. The parliamentary debates pertaining to this law dealt with the unitary income tax as a form of income taxation but favored the schedular system. The issue was reviewed in 1949 when the complementary tax was enacted and, it was concluded to maintain the schedular system. Since then, arguments for the unitary system reappeared in connection with virtually every substantial tax reform discussion.

17. The current Egyptian policy position favoring the unitary system seems to be based on its widely accepted principles. It has been repeatedly stated that the unitary tax is closer to the philosophy of progressive income taxation as incomes will be aggregated and taxed in their entirety. Personal exemptions to be allowed according to the size of the family, coupled with the graduated rates will achieve the maximum of ability to pay. Income, regardless of its source, will be taken as the norm of such ability, and consequently, differentiation and inequalities resulting from special tax treatment of different income categories will be eliminated.

18. The proposed tax could raise the automatic flexibility of the revenue (elasticity), the low level of which is apparent

under the current Egyptian tax structure, although it has not been documented. Increasing revenue elasticity is an essential goal of tax reforms as it increases the revenue yield without frequent increases in statutory rates and the application of new additional taxes. In addition to the relative advantages related to equity and fiscal efficiency, the unitary tax offers administrative simplification. Multiple tax returns that are filed by the same taxpayer on different stipulated dates and, sometimes, to different tax offices will be replaced by a single tax return. Thus, the related problems associated with definition and classification of income will be substantially reduced.

19. The core of the reform does not lie in stating the principles of the unitary tax, but in ascertaining that these principles can be implemented with greater efficiency than under the current system. The questions to be dealt with are the necessary deviations of the Egyptian tax system from these principles and the probable effects of such deviations on revenue and distribution.

20. Will the future unitary income tax treat all income equally regardless of the source as a distributional factor? It is most unlikely that such an equality will be achieved as differentiation in favor of wages and salaries has persisted since 1939, and the trend is toward a much larger scope of differentiation. The three bills proposed the exclusion of the representation fees, usually given to high wage earners, and the merit increase from gross wages.⁽¹⁾ Such exclusion can reach a maximum of L.E. 3,000 or the entire salary, whichever is less. Carrying over this provision to the unitary tax could result in excessive revenue loss, substantial reduction in effective tax rates, and exceptional differentiation, especially in high income brackets.

21. The experience of other countries is quite relevant as it confirms that differentiation according to the source of income has continued under the unitary income tax, but through different techniques. In France, wage earners are favored through an exclusion of 20 per cent of gross wages and salaries accorded in

(1) Representative fees are allowed to employees of given ranks and do not necessarily reflect the responsibility of the post. They are supplements to wages and salaries, contrary to what the name may suggest.

addition to necessary expenses. These expenses are determined either on an itemized basis or as a standard deduction of 10 per cent of wages and salaries to be increased under certain conditions by no more than F 50,000. During 1959-73 wage earners benefited from an earned income credit of 5 per cent of taxable wages and salaries, and exemption from a complementary tax introduced within the framework of the unitary tax, but limited to nonwage earners.⁽²⁾ The complementary tax and the earned income credit were eliminated in 1970 and 1973, respectively.

22. Chad and the People's Republic of the Congo, despite applying the same nominal tax rates to the total taxable income, allow different deductions for income from different sources. In Chad, the deduction amounts to 40 per cent of wages and salaries and 20 per cent of industrial profits. In addition wage earners receive a tax credit of 4 per cent of taxable wages and salaries. In the same way the Congo's unitary income tax allows a deduction of 30 per cent from wages and salaries and 2 per cent earned income credit. Both countries levy a complementary tax on nonwage earners with rates and personal exemptions different from those accorded under the principal income tax. In considering the unitary tax, such experience needs to be examined as differentiation instead of being carried out through different nominal rates on income schedules, is achieved through exclusions, credits, and additional taxes on some categories of income. In reviewing the experience of other countries it is not intended, however, to discredit the effectiveness of the unitary tax, but to point out that under both systems (schedular and unitary) the final outcome is different effective rates on incomes from different sources.

23. Can replacing the current income tax system by a unitary tax bring about administrative improvements? The unitary income tax in itself should reduce the problem of aggregating incomes from different sources, but other administrative problems, that may range from identifying taxpayers to the collection of assessment, can persist and continue. The effectiveness

(2) During the period 1948-1959 wage earners were exempt from the proportional income tax in which the schedular taxes were consolidated at the rate of 18 per cent. They were liable, however, to the progressive tax, which corresponded to the complementary income tax.

of the unitary income tax in the case of taxpayers with incomes from multiple sources is less significant than it may appear to the advocates of the unitary tax. According to the statistical studies, available for some countries, the vast majority of taxpayers receive their income from a single source, and therefore this tax tends to be less global and general, although with varying degrees, depending on the economic structure of the country. In France the unitary income tax has not reduced the administrative tax problems involved in assessing some income categories (commercial and industrial profits). The *forfait* system, which is sometimes considered as a distinctive feature of the schedular system, has remained under the unitary tax. On the contrary, its coverage, as measured by the number of taxpayers, turnover, and taxable profits has been consistently increasing as (a) in 1969 taxpayers taxed according to the *forfait* system represented 88 per cent of individuals with commercial and industrial profits against 83 per cent in 1959, (b) turnover determined on the *forfait* basis represented 37.8 per cent of total turnover in 1959 and 41 per cent in 1969, and (c) profits determined on the *forfait* basis increased from 61.5 per cent to 71.0 per cent during the same period. The increasing coverage of the *forfait* system suggests the continuity of some administrative problems regardless of the form of the income tax. Meanwhile, the broad application of this system has reduced the efficiency of the income tax in improving equity and minimizing cyclical fluctuation of the economy.⁽³⁾ In Egypt, the *forfait* system, known as standard assessment, covers virtually all individuals and its duration for some categories of taxpayers may reach five years. To improve equity and revenue elasticity, the three bills proposed the elimination of the standard assessment and its replacement by actual assessment following annual examination and audit of all taxpayers. The Tax Department may not be capable of coping with annual auditing of all taxpayers. Meanwhile, such a requirement is not compatible with other provisions of the tax law which exclude taxpayers with invested capital of less than L.E. 2,000 or with profits not exceeding L.E. 1,000 from filling decla-

(3) For a detailed analysis of the French *forfait* system under the unitary income tax see France, Ministère de l'Economie et des Finances, Statistiques et Études Financières, *Rapport du Conseil des Impôts*, (November 1972) pp. 37 - 49.

rations based on regular accounts. Narrowing the scope of the standard assessment may be more appropriate than its complete elimination to achieve the maximum of administrative advantage, but without impairing equity and elasticity. The issue of actual assessment, based on annual audits, needs to be examined in connection with the rate structure and the minimum personal exemption to be allowed under the unitary income tax, and the administrative capability of meeting such a heavy burden.

24. Another major problem that needs to be resolved is to bring the real property taxes closer to the principles of income taxation. The taxes on buildings and agricultural land are the oldest direct taxes and over the last 40 years they have not been transformed into true schedular taxes. They are assessed on cadastral values that remain in effect for long periods and without filing declarations. Their assessment and collection are the responsibility of a separate department from that responsible for income taxes. Cadastral values of buildings and agricultural land are included in the adjusted gross income of the complementary tax with a standard deduction of 20 per cent. This system, which is not in complete conformity with schedular taxation, will be in apparent inconsistency with a unitary tax.

25. Will the unitary tax improve the revenue capability of taxes on income and profits? Obviously, the revenue effects will depend upon the changes to be introduced and whether such changes would result in a broader and a more comprehensive aggregate base. On broadening the base there are two conflicting trends. On one hand, consideration is given to taxing some activities that are currently exempt, as well as capital gains. On the other hand, exemptions have been increasingly accorded on an *ad hoc* basis and in violation of the already observed principles of income taxation of the last 40 years. To mitigate the unreasonable burden of income taxes, exemptions have been granted to citizens and residents employed by some approved enterprises, large corporations or institutions. These exemptions are sometimes granted without consultation with the Tax Department which is currently engaged in listing all exemptions.

26. The base of the unitary tax will also be influenced by determining those who will be liable. Currently, the schedular taxes and the complementary tax are levied on the principle of sour-

ce. Originally, the complementary tax was based on the world-wide income of citizens and residents but according to later amendments, it has been limited to incomes liable to schedular taxes only. Received or earned incomes that are exempt or excluded from schedular taxes are in turn excluded from the complementary tax. In designing the unitary tax, it is essential to choose between the continuity of the current territorial basis or shifting to the world-wide income basis.

27. Under the present tax structure, corporations are not liable to a separate tax but are subject to the different taxes and at the same rates as levied on different categories of incomes. Accordingly, profits realized from carrying on business through a permanent establishment are liable to the schedular tax on commercial and industrial profits. Dividends are subject to the tax on income from movable capital at almost the same rate as that on profits. Dividends received by shareholders subject to the complementary tax are included in the adjusted gross income, but with no credit or deductions at the shareholders' level, to mitigate double taxation of corporate profits. On the corporate level, dividends are deducted in determining taxable profits, thus the profits tax is actually limited to undistributed profits. Existing tax treatment of corporations, regardless of the arguments given in its support, would not be acceptable once a unitary tax is introduced. Therefore, it would become essential to have a corporate profits tax with a separate rate structure, and consequently the complicated issues pertaining to how corporations should be taxed have to be analyzed and resolved. These issues include (a) the basis on which corporate profits would be determined (world-wide or territorial), (b) the rate structure, (c) taxation of dividends in the hands of shareholders, and (d) double taxation of corporate profits and measures to reduce it. In addition to these essential issues consideration may be given to introducing a minimum corporation tax of 1 per cent of turnover, to be paid at the beginning of the taxable year. The minimum tax is deducted from the corporate profits tax, but with no refund in case the minimum exceeds the profits tax. The minimum tax would put the payment of the tax on a more current basis. It can also be coordinated with the withholding at source as applied to purchases, contracts, and transactions with the public sector.

III. Statistical Studies

28. The currently available data serve the administrative needs of the Tax Department as they show actual revenue from income taxes, amount of assessment to be collected, and cases with unresolved conflicts. Data that are essential for policy making decisions are nonexistent as no special effort had been undertaken to produce them. In replacing the schedular by a unitary system, it is desirable to compile special statistics covering the schedular and general income taxes. These statistics are essential to obtain (a) reliable and informative analysis of the current system (b) information on how the individual tax burden is distributed and on the effective tax rates on corporations (combined rates of taxes on profits and distribution), and (c) basis for the determination of the appropriate rate scale, personal exemptions, and the degree of differentiation in favor of wages and salaries once the unitary tax is adopted.

29. The lack of such data explains the officials' uncertainty and concerns about the outcome of the reform as they are not in a position to estimate the probable revenue effects or tax burden changes. The suggested statistical study, if successfully undertaken, will provide for the first time the data needed for policy making purposes.⁽⁴⁾ Meanwhile, the data will shed light on the issues relevant to income aggregation under the advocated unitary income tax. The data should be based on samples of taxpayers liable to each income tax. The details of each sample have to be determined in advance taking into account the availability of the information and their sources. Such studies are usually

(4) It is interesting to note that in Portugal similar uncertainties deferred the adoption of the unitary income tax. At the time of the 1963 reform the advantages of the unitary system were recognized but its adoption was postponed because of (a) the reorganization of the Tax Department to administer the new tax, and (b) the need to assess and quantify the revenue and distribution aspects of the system as well as the effects of the changes introduced in 1963 so the changeover could be taken with a greater confidence. Detailed statistical studies were prepared in 1975 to show the income taxes in their actual operation and to reduce the policy makers' uncertainties about transforming the schedular into unitary. For further details see *Ministerio das Financas, The Portuguese Tax System* (Lisbon 1966), p. 11.

undertaken by the Tax Department with the collaboration of the Department of Statistics. In France, similar income tax studies were produced by the Tax Department with the collaboration of the National Institute of Statistics and Economic Studies.⁽⁵⁾

30. To facilitate undertaking the recommended statistical study, the attached tables were prepared to show in detail the needed data and possibly their sources. The data cover the schedular taxes on wages and salaries, noncommercial profits, commercial and industrial profits with separate tabulations for corporations and the general income tax. The tax on income from movable capital will not be covered as it is withheld at source without taking into account the person to whom dividends, interest, and other distribution, flow.

31. For the schedular tax on wages and salaries, Table 1 will show the distribution of the taxpayers by taxable bracket, their gross income, taxable income, and amount of income tax. Gross income should include income in kind as currently evaluated, and other allowances such as representation fees. The income taxes should include the schedular tax, and taxes for defense, national security and war. Table 2 will show the family situation of the taxpayers by taxable brackets. Data can easily be obtained from the withholding sheets supplied by employers as wage earners do not file declarations for the purposes of the schedular tax except when employed by more than one employer. Separate data for the employees of the civil service, private sector, and public sector corporations may be produced to show the impact of the different structure of wages and salaries on the distribution of taxpayers in taxable brackets, and consequently the effective rates.

32. Tables 3 and 4 will show the same data for taxpayers liable to the tax on commercial profits. Data should be based on taxpayers' returns as selected according to the sample. As all tax returns for the latest taxable year are not yet audited, the sample will include two sets of returns (audited and nonaudited).

(5) For a brief description of these statistics and their conclusions, see Ministère de l'Economie et des Finances, *Rapport au Conseil économique et social sur les orientations de la réforme de l'impôt sur le revenu des personnes physiques* (Paris, 1969), p. 26.

The amount of income taxes should be based on the latest available assessment which could be the self-assessment as declared by the taxpayer, or the adjusted assessment as determined by the Tax Department following its audit. Efforts should be made to separate the data according to the two sets of returns to minimize the possibility of distorting the results of the study and possibly to evaluate the efficiency of the tax auditing program.⁽⁶⁾

33. Tables 5 - 7 will show the information concerning the tax on individual commercial and industrial profits. As this schedular tax is proportional, the proposed number brackets can be modified depending on the specific needs of the Tax Department. The effective rates (Table 5) are based on the turnover as well as profits. Quite often the actual amount of the profits tax is less than 1 per cent of the turnover and, therefore, some countries stipulate that this tax, as a minimum, should not be less than 1 per cent of the turnover. Table 7 will show the scope of the standard assessment, and consequently the relative importance of assessments based on the actual basis. The three bills as already pointed out (page 8) proposed the elimination of the standard assessment. It is judged that this proposal is quite ambitious as the Tax Department may not be able to cope with the administrative problems of auditing annually all taxpayers. Data in Table 7 will be useful in evaluating the actual coverage of the standard assessment, and the consequences of its complete elimination without adverse effects on revenue or accumulation of nonaudited cases.

34. Tables 8 and 9 will show the effective rates for private and public corporations. Information will also be obtained regarding the efficiency of collecting the profits tax at source from purchases, contracts and transactions with the public sector. The possibility of a minimum corporate tax at such a low level of 1 per cent of turnover explains the effective rates in terms of the turnover as well as profits. Complying the corporate data should not raise special difficulties as assessment of corporate taxes is centralized in the two offices of Cairo and Alex-

(6) The separation of the tax returns (audited and nonaudited) has to be observed in connection with the tax on commercial and industrial profits for both individuals and corporations, and for the general income tax as discussed in the following paragraphs.

andria, and the number of corporations is far smaller than that of individuals. Therefore, it may be feasible to cover all corporations without a separate sample. Consideration may be given to showing the same data by the nature of corporate business or activity such as financial institutions, industrial enterprises, import and export corporations, mining, transportation, etc.

35. Tables 10-15 cover the general income tax and the following is a summary of the proposed data :

- (1) Distribution of taxpayers by taxable brackets showing gross income, net income (adjusted gross income) taxable income, and schedular, additional and general income taxes (Table 10). The data may show that the majority of taxpayers fall in the initial tax brackets, and that the steep progressive nominal rates levied on high brackets are not effectively applied. Reliable information will be obtained about the effective progressivity of income taxes, and in particular, the general income tax.
- (2) Deductions that are disallowed under the schedular taxes, but allowed in determining the taxable base of the general income tax (Table 11). The principal items to be shown are personal exemptions, schedular and other additional taxes insurance premiums and interest.
- (3) Composition of gross income by source and taxable brackets (Table 12). These data are essential in evaluating the role of the general income tax in aggregating incomes from different sources. The greater this role, the more likely the unitary tax will be efficient in taxing the taxpayers' income in its entirety, and consequently, the larger the advantages to follow its adoption. Closely related to this issue are the data to be incorporated in Table 13 which will show the percentage distribution of taxpayers with incomes exclusively from one source and the amount of income tax assessed on each particular source of income.
- (4) To shed some light on the differential tax treatment based on source, Table 14 will show the effective rates of income taxes by taxable brackets and source. Such data are needed in deciding on the continuity of differential treatment, its magnitude and possibly the means to achieve this policy goal.

(5) Finally, the family situation of the taxpayers liable to general income tax will be shown by taxable brackets (Table 15). Personal exemptions are currently allowed on a vanishing basis and taxpayers with taxable income of more than L.E. 2,500 do not receive personal exemptions for their dependents but with provision to eliminate the notch effect. This information is needed, however, to compare the family situation of taxpayers subject to the general tax with those subject to schedular taxes and also to assess the total personal exemptions allowed under the two taxes for some categories of taxpayers.

36. To justify the efforts involved in producing the recommended data, it is essential to scrutinize the details of the samples before collecting the data which needs to be processed by the Data Processing Center. The program for processing these data needs to be clearly written and reviewed by the Tax Department officials responsible for this study and their counterparts in the Department of Statistics. The efficiency of statistical studies, either for policy making purposes, or administrative needs, will depend primarily on the degree of accuracy in obtaining and recording the data from original sources.

Table 1.—Egypt : Schedular Tax on Earned Income (Wages and Salaries), Number of Taxpayers, Gross Income Taxable Income, Amount of Income Taxes and Effective Rates, 1977

(Amounts in millions of Egyptian pounds)

Taxable Brackets (Based on Article 63 of Law No.14/1939)	Taxpayers		Gross Income ¹⁾		Taxable Income		Income Taxes		Effective Rates (Per cent)
	Number	Per cent of Total	Amount	Per cent of Total	Amount	Per cent of Total	Schedular Tax	Additional Taxes ²⁾	
—	100								
101 —	250								
251 —	400								
401 —	500								
501 —	700								
701 —	1,000								
1,001 —	1,300								
1,301 —	1,800								
1,801 —	2,800								
2,801 —	4,800								
4,801 and more									

Source : To be based on a statistical study, the details of which will be outlined by the Tax Department.

1) Including income in kind, representation fees, and merit increases.

2) Including defense, national security and war taxes.

Table 2.—Egypt : Schedular Tax or Earned Income (Wages & Salaries), Family Situation by Taxable Brackets, 1977

Taxable Brackets (Based on Article 63 of Law No. 14/1939)	Taxpayers		Single		Married with no children		Married with one child		Married with more than one child	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
—	100									
101 — 250										
251 — 400										
401 — 500										
501 — 700										
701 — 1,000										
1,001 — 1,300										
1,301 — 1,800										
1,801 — 2,800										
2,801 — 4,800										
4,801 and more										

Source : To be based on a statistical study, the details of which will be outlined by the Tax Department.

Table 3.—Egypt : The Schedular Tax on Earned Income (Profits from Independent Professions), Number of Taxpayres, Gross Income, Taxable Income, Income Taxes and Effective Rates, 1977

(Amounts in millions of Egyptian pounds)

Taxable Brackets (Based on Article 72 of Law No. 14/1939)	Taxpayers		Gross Income		Taxable Income		Income Taxes		Effective Rates (Per cent)
	Number	Per cent of Total	Amount	Per cent of Total	Amount	Per cent of Total	Schedular Tax	Additional Taxes ¹⁾	
— — 1,500									
1,501 — 2,000									
2,001 — 3,000									
3,001 — 5,000									
5,001 and more									

Source : To be based on a statistical study, the details of which will be outlined by the Tax Department.

1) Including defence, national security, and war taxes.

Table 4.—Egypt: The Schedular Tax on Earned Income (Profits from Independent Professions), Family Situation by Taxable Brackets, 1977

Taxable Brackets (Based on Article 72 of Law No. 14/1939)	Taxpayers		Single		Married with no children		Married with one child		Married with more than one child	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
— — 1,500										
1,501 — 2,000										
2,001 — 3,000										
3,001 — 5,000										
5,001 — more										

Source : Based on a statistical study, the details of which will be outlined by the Tax Department.

Table 5.—Egypt : Tax on Commercial and Industrial Profits (Individuals) : Number of Taxpayers, Gross Profits, Turnover, Taxable Profits, Amount of Income Taxes, and Effective Rates by Taxable Profits, 1977
(Amounts in millions of Egyptian pounds)

Taxable Profits	Taxpayers		Gross Profits		Turnover		Taxable Profits		Income Taxes		Effective Rates	
	Number	Per cent of Total	Number	Per cent of Total	Amount	Per cent of Total	Amount	Per cent of Total	Schedular Tax	Additional ¹⁾ Taxes	As % of turnover	As % of profit
— — 500												
501 — 1,000												
1,001 — 2,000												
2,001 — 3,000												
3,001 — 4,000												
4,001 — 5,000												
5,000 and more												

Source : To be based on a statistical study, the details of which will be outlined by the Tax Department

1) Including defence, war, and national security taxes.

Table 6.—Egypt : Tax on Commercial & Industrial Profits (Individuals) : Family Situations by Taxable Profits,
1977

Taxable Profits	Taxpayers		Single		Married with no children		Married with one child		Married with more than one child	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
	of Total		of Total		of Total		of Total		of Total	
—	500									
501 —	1,000									
1,001 —	2,000									
2,001 —	3,000									
3,001 —	4,000									
4,001 —	5,000									
5,001 and more										

Source : To be based on a statistical study, the details of which will be outlined by the Tax Department.

Table 7.—Egypt : Tax on Commercial and Industrial Profits (Individuals) : Basis of Assessment, by Taxable Profits,
1977

Taxable Profits	Taxpayers Number Per cent of Total	Standard Assessment		Actual Assessment	
		Number of Taxpayers	Taxable Profits	Number of Taxpayers	Turnover Profits Tax
0 — 500					
501 — 1,000					
1,001 — 2,000					
2,001 — 3,000					
3,001 — 4,000					
4,001 — 5,000					
5,001 and more					

Source : Based on a statistical study, the details of which will be outlined by the Tax Department.

Table 8.—Egypt : Corporate Taxes on Private Corporations, Basis of Collection, and Effective Rates by Taxable

Profits, 1977

(Amounts in millions of Egyptian Pounds)

Taxable Profits	Corporations		Turnover		Profits		Commercial and industrial profits taxes ¹⁾		Tax on income from movable capital ¹⁾		Amount withheld at source		Effective rates	
	Number	Per cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	As a per cent of turnover	As a per cent of profits
0 — 1,000														
1,001 — 5,000														
5,000 — 10,000														
10,001 — 50,000														
50,001 — 100,000														
100,001 — 250,000														
250,001 — 500,000														
500,001 — 1,000,000														
1,000,001—5,000,000														
5,000,001 and more														

Source : Based on a statistical study, the details of which will be outlined by the Tax Department.

1) Including additional taxes for defense, national security and war.

Table 9— Egypt : Corporate Taxes on Public Corporations, Basis of Collection and Effective Rates Taxable Profits, 1977
(Amounts in millions of Egyptian Pounds)

Taxable Profits	Corporations		Turnover		Profits		Tax on commercial and industrial profits		Tax on income from movable capital ¹⁾		Amount withheld at source		Effective rates	
	Number	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	As a per cent of turnover	As a per cent of profits
0 — 1,000														
1,001 — 5,000														
5,001 — 10,000														
10,001 — 50,000														
50,001 — 100,000														
100,001 — 250,000														
250,001 — 500,000														
500,001 — 1,000,000														
1,000,001 — 5,000,000														
5,000,001 and more														

Source : Based on a statistical study, the details of which will be outlined by the Tax Department.

1) Including additional taxes for defence, national security, and war.

Table 10.—Egypt : The General Income Tax : Number of Taxpayers, Gross Income, Net Income, Taxable Income, and Income Taxes by Taxable Brackets, 1977

Taxable Brackets (Based on Article 11 of Law No. 99/1959)	Taxpayers Number Per Cent of Total	Gross Income		Net Income		Taxable Income		Income Taxes		
		Amount	Per Cent of Total	Amount	Per cent of Total	Amount	Per cent of Total	Schedular & General	Additional Tax	Total Amount Per cent ¹⁾
1,001 — 1,500										
1,501 — 2,000										
2,001 — 3,000										
3,001 — 4,000										
4,001 — 5,000										
5,001 — 6,000										
6,001 — 7,000										
7,001 — 8,000										
8,001 — 9,000										
9,001 — 10,000										
10,001 and more										

Source : Based on a statistical study, the details of which will be outlined by the Tax Department.

1) As a per cent of taxable income.

Table 11. — Egypt : The General Income Tax : Composition of Total Deductions and their Percentage Shares of Gross Income by Taxable Brackets, 1977
(Amounts in millions of Egyptian pounds)

Taxable Brackets (Based on Article 11 of Law No. 99/1949	Total Deductions		Personal Exemptions		Schedular & other taxes		Insurance Premiums		Interest	
	Gross Income	Amount	Per cent of Gross Income	Amount	Per cent of Deduct- tions	Gross Income	Amount	Per cent of Deduct- tions	Gross Income	Amount
1,001 — 1,500										
1,501 — 2,000										
2,001 — 3,000										
3,001 — 4,000										
4,001 — 5,000										
5,001 — 6,000										
6,001 — 7,000										
7,001 — 8,000										
8,001 — 9,000										
9,001 — 10,000										
10,001 and more										

Source : Based on a statistical study, the details of which will be outlined by the Tax Department.

Table 12.—Egypt : The General Income Tax : Composition of Gross Income by Taxable Brackets, 1977
(Amounts in millions of Egyptian Pounds)

Taxable Brackets (Based on Article 11 of Law No. 99/1949)	Number of Taxpayers	Gross Income	Income from Real Property		Com. & Ind Profits.		Profits from Independent Professions		Wages & Salaries		Income from movable capital		Income from Abroad	
			Amount	Per Bldgs Agri-Total cent of gross	Amount	Per cent of gross	Amount	Per cent of gross	Amount	Per cent of gross	Amount	Per cent of gross	Amount	Per cent of gross
1,001 — 1,500														
1,501 — 2,000														
2,001 — 3,000														
3,001 — 4,000														
4,001 — 5,000														
5,001 — 6,000														
6,001 — 7,000														
7,001 — 8,000														
8,001 — 9,000														
9,001 — 10,000														
10,001 and more														

Source : Based on a statistical study, the details of which will be outlined by the Tax Department

Table 13.—Egypt : The General Income Tax : Percentage Distribution of Taxpayers, Gross Income and Taxable Income by Sources of Incomes and Taxable Brackets, 1977

Taxable Brackets (Based on Article 11 of Law No. 99/1949)	Exclusively Wages & Salaries		Exclusively Commercial & Industrial Profits		Exclusively income from real property		Exclusively income from movable capital		Multiple Sources	
	Total	Gross Taxable Taxpayers Income	Total	Gross Taxable Taxpayers Income	Total	Gross Taxable Taxpayers Income	Total	Gross Taxable Taxpayers Income	Total	Gross Taxable Taxpayers Income
1,001 — 1,500										
1,501 — 2,000										
2,001 — 3,000										
3,001 — 4,000										
4,001 — 5,000										
5,001 — 6,000										
6,001 — 7,000										
7,001 — 8,000										
8,001 — 9,000										
9,001 — 10,000										
10,001 and more										

Source : Based on a statistical study, the details of which will be outlined by the Tax Department.

Table 14.—Egypt : Effective Rates of Individual Income Taxes (Schedular and general) by Income Sources and Taxable Profits of General Income Tax, 1977

Taxable Brackets (Based on Article II of Law No. 99/1949)	Total Taxable Income			Wages & Salaries			Commercial & Industrial Profits			Profits from Independent Professions			Income from real property			Income from movable capital		
	Income			General			General			General			General			General		
	Total Income Taxes	Sched- ular & Addi- tional Taxes	General Income Taxes	Total Income Taxes	Sched- ular & Addi- tional Taxes	General Income Taxes	Total Income Taxes	Sched- ular & Addi- tional Taxes	General Income Taxes	Total Income Taxes	Sched- ular & Addi- tional Taxes	General Income Taxes	Total Income Taxes	Sched- ular & Addi- tional Taxes	General Income Taxes	Total Income Taxes	Sched- ular & Addi- tional Taxes	General Income Taxes
1,001 — 1,500																		
1,501 — 2,000																		
2,001 — 3,000																		
3,001 — 4,000																		
4,001 — 5,000																		
5,001 — 6,000																		
6,001 — 7,000																		
7,001 — 8,000																		
8,001 — 9,000																		
9,001 — 10,000																		
10,001 and more																		

Source : Based on a statistical study to be undertaken, the details of which will be outlined by the Tax Department.

Table 15.—Egypt : The General Income Tax, Family Situation by Taxable Brackets, 1977
(Amounts in millions of Egyptian Pounds)

Taxable Brackets (Based on Article 11 of Law No. 98/1949)	Number of taxpayers		Single		Married with no children		Married with one child		Married with two children		Married with three children		Married with four children or more	
	No.	Per cent of total	No.	Per cent of total	No.	Per cent of total	No.	Per cent of total	No.	Per cent of total	No.	Per cent of total	No.	Per cent of total
1,001 — 1,500														
1,501 — 2,000														
2,001 — 3,000														
3,001 — 4,000														
4,001 — 5,000														
5,001 — 6,000														
6,001 — 7,000														
7,001 — 8,000														
8,001 — 9,000														
9,001 — 10,000														
10,001 or more														

Source : Based on a statistical study, the details of which will be outlined by the Tax Department.

THE IMPACT OF TARIFFS ON EXPORTABLE GOODS' PRICES : THE EGYPTIAN CASE*

by

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ABSTRACT

In this paper an attempt is made to measure the direct and indirect impact of tariffs on domestic costs and prices in the Egyptian economy. An input-output model is used to trace this effect, giving the productive capacity and the composition output, and assuming a fixed exchange rate

Two main cases of firms' behaviour, that are relevant to the Egyptian experience, are considered. The results show a considerable increase in domestic cost of exportables which may reduce their competitiveness in the world market.

Though the input-output technique used for reaching this conclusion has definite limitations, the magitudes of the results are consistent with other supplementary evidence.

I. INTRODUCTION

The Egyptian economy experienced salient structural changes during the last three decades. Various investment programmes and plans were designed to establish a more complex industrial structure through import substitution. Policy makers believed in import substitution

*I am grateful to Anthony Clunies-Ross for comments on an earlier draft and to Professor R.D.C Black for his encouragement and help.

strategy as a panacea for curing the country's chronic balance of payments deficit and for creating a more diversified economy, and consequently a more independent country. As a result, a great deal of industrial growth took place which was almost wholly inward-oriented.

The main economic instruments for implementing this strategy were escalating tariffs on imports, various pricing and quantitative measures at all levels of production and transactions, and a complete government monopoly of foreign trade.

In recent years, both economic development theoreticians and policy makers in Egypt, as well as in other developing countries, have become increasingly disillusioned with the result of such a development strategy. The strategy that was initially envisaged as a cure for the balance of payments difficulties has ended by creating more acute foreign exchange bottlenecks. On the import side, there was a dramatic change in Egypt's trade position in food from being a net exporter to being a net importer. An increasing share of its needs from intermediate and capital goods were to be imported. More significantly, this dramatic increase in essential imports was accompanied by a rigid structure and almost stagnant growth of exports. In the words of a recent study on the Egyptian economy :

"exports failed the economy at a time when Egypt decided to embark on long-term investment projects and when growing population and incomes, unmatched by corresponding increases in agricultural output, continued to inflate the food import bill. This failure is largely due to the slow performance of agriculture, partly to the Government's inability to check the growth of consumption and to the pursuit of inward-looking import substitution policies".

This paper examines the effect of Egypt's import substitution policy, enforced by means of heavy and escalating tariffs, on the prices of domestic production of exportables. Throughout the discussion it is assumed

1) Robert Mabro, *The Egyptian Economy, 1952 - 1972*, Oxford University Press, London, 1974, p. 181.

that the composition of domestic production is unchanged, the productive capacity is given, and the exchange rate is fixed.

In the next section an input-output model is discussed and suggested as a means of measuring the effects of a change in certain prices on other prices. The results and their policy implications are presented and analysed in Section III. Section IV is devoted to a concluding discussion of the main premises implied in the model and their relevance to the Egyptian economy. Finally, Section V provides a brief conclusion.

II, THE MODEL

The following model recognises the crucial role of intermediate goods in international trade and rests on the supposition that input-output analysis can be useful in quantifying the consequences of an increase in any one price upon the others given the structural relationships of the system.⁽²⁾

Use of the input-output technique in price-cost analysis has been more widely applied in centrally-planned economies such as the U.S.S.R. and Hungary, than in market economies. In the former group, price calculations have been essential for determining the system of prices which should be fixed by the central authority, while input-output analysis in the latter group has mainly been used to make ex-post comparisons between the computed "optimal" prices and those prevailing in different markets.⁽³⁾

In tracing the effects of price changes on other prices, the input-output technique focuses on the simple identity that unit price is equal to unit cost. The unit cost of any commodity is composed of its material

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- 2) Input-output technique cannot be used to measure the effects of a change in price upon the quantities of goods consumed or produced. For a full discussion of uses of input-output analysis in cost and price relations see : U.N., Department of Economic and Social Affairs, *Problems of Input-Output Tables and Analysis*, Studies in Methods, series F. No. 14, New York, 1966, pp. 78 - 127.
- 3) *Ibid.*, pp. 89 - 90.

costs and its primary costs. Material costs are costs of purchased inputs from other sectors, while primary cost include such items as wage costs, taxes, imports and other non-wage costs such as profits and depreciation.

Let us use the following notations and definitions :

- P_j = price of domestic commodity j .
 P_v = price of value added per unit of output of domestic commodity j
 p_{mi} = domestic price of imported good i .
 a_{ij} = quantity of output of commodity i absorbed by commodity j per unit of commodity j .
 m_{ij} = quantity of import of commodity i absorbed as an input of commodity j .
 V_{ij} = quantity of primary factors absorbed in commodity j per unit of commodity j .
 r_{ij} = quantity of output of commodity i required directly and indirectly per unit of commodity j .

Matrices :

- A = $[a_{ij}]$
 M = $[m_{ij}]$
 $\hat{V}$ = $[v_j]$ = a diagonal matrix of v_j
 P_x, P_m = Vector of output prices and import prices respectively.
 $[r_{ij}]$ = $[I - A]^{-1}$
 $[r_{ij}]^*$ = $[I - A - \hat{V}]^{-1}$

After price changes, the same symbols have been used to denote the same meaning, and have been distinguished by a bar, e.g. $\bar{P}_i$ and $\bar{p}_{mj}$ are the new prices of domestic commodity i and imported goods j respectively.

Using the above notations, the prices of different commodities can be expressed as follows :

$$\left. \begin{aligned} P_1 &= a_{11}P_1 + a_{21}P_2 + a_{31}P_3 \dots\dots + a_{n1}P_n + m_1P_m + V_1 \\ P_2 &= a_{12}P_1 + a_{22}P_2 + a_{32}P_3 \dots\dots + a_{n2}P_n + m_2P_m + V_2 \\ &\dots\dots\dots \\ &\dots\dots\dots \\ P_n &= a_{1n}P_1 + a_{2n}P_2 + a_{3n}P_3 \dots\dots + a_{nn}P_n + m_nP_m + V_n \end{aligned} \right\} \quad (I)$$

The i th equation in (I) above states that the price of one unit of commodity i is equal to the value of all inputs from other sectors and the value of imported input absorbed in one unit of output of commodity i , plus the value added incurred in its production per unit of its output.⁴

The system specified in (1) contains the elements a_{ij} , m_j and V_i which are all assumed to be constants, while there are n equations and $n + 1$ unknowns (n P 's and P_m). To obtain a numerical solution, we have, therefore, to designate any one price as **numeraire** and solve for the remaining n prices with reference to it. Alternatively, which is the same thing, we divide the equations in (1) all through by P_m . Thus, we get n linear equations to determine our n unknown price ratios.

Accordingly, the effects of changes in import prices can be computed by specifying appropriate values for P_m , while the effects of changes in elements of primary cost can be determined by specifying changes in V_i .

Two main assumptions are implied in such analysis. The first is that of constant coefficients over time of all domestic and imported inputs and of value added costs. The second assumption is constant returns to scale exemplifying Euler's theorem on homogeneous functions.⁵

4) One can see that the n equations in (1) are the transpose of the general output system, i.e. the rows and columns have been interchanged; cf. *Ibid.*, pp. 18 - 19; also the pioneer work of Wassily Leontief, *The Structure of American Economy, 1919-39*, Oxford University Press, New York, 1951, pp. 188 - 201.

5) Robert Dorfman, Paul A. Samuelson, and Robert M. Solow, **Linear Programming and Economic Analysis**, McGraw-Hill Book Company, Inc., New York, 1958, p. 237.

It is worth noting that when all the coefficients in equation (1) are calculated from an original value flow input-output table (as is the case for the Egyptian economy), the absolute level of prices can not be determined from the model. The reason is that these coefficients are measured in such units as to make the price of each commodity equal to unity.⁶

If unit import costs can be split into several commodities 1, 2, 3 ... n, then the price of commodity j, p_j , may be written in terms of scalars as :

$$P_j = \sum_{i=1}^n a_{ji} P_i + \sum_{i=1}^n m_{ji} P_{mi} + V_j \quad (2)$$

The coefficients a_{ji} are those coefficients which, derived from the pre-increase input-output table, are equivalent to physical input coefficients when all original prices are unity. After the rise in prices of the imported inputs, however, the final commodity prices take on new, unknown values; while the prices of all other primary inputs, P_v , remain constant, equal to 1.

We turn now to discuss the question of the firm's behaviour when facing an increase in its imported input costs.

Without enough empirical evidence, one may consider, *inter alia*, the following two possible behaviours. The first is that the firm increases its selling price by the whole increase in imported input prices. The second possibility is that the firm increases its selling price in such a way to keep its value added coefficient as a constant fraction of the selling price.

These two assumptions are **only** two possibilities of firms' responses to an increase in input prices. They have been singled out for their relevance to the Egyptian case. Admittedly the firms' behaviour would depend on different factors that vary from one economy to another (see below).

6) Dorfman, Samuelson, and Solow, *Ibid.*, pp. 237 - 240.

According to the first price behaviour, equation (2) above becomes :

$$\bar{P}_j = \sum_{i=1}^n a_{ji} \bar{P}_i + \sum_{i=1}^n m_{ji} \bar{P}_{mi} + V_j \quad (3)$$

and with the second possible price behaviour equation (2) becomes :

$$\tilde{P}_j = \sum_{i=1}^n a_{ji} \tilde{P}_i + \sum_{i=1}^n m_{ji} \tilde{P}_{mi} + V_j \tilde{P}_v \quad (4)$$

It is readily obvious from equations (3) and (4) that, once the increase in import prices is known, the new price level of commodity j can be obtained under the two price behaviours of the f.i.m.

If reference is made to the symbols introduced above, and if the following system of matrix symbols is used :

$$P_x = [P_{x1} \ P_{x2} \ \dots \ P_{xm}]$$

$$P_v = [P_{v1} \ P_{v2} \ \dots \ P_{xm}]$$

$$P_m = [P_{m1} \ P_{m2} \ \dots \ P_{mn}]$$

$$\hat{V} = \begin{pmatrix} v_1 & 0 & 0 & 0 & 0 \\ 0 & v_2 & 0 & 0 & 0 \\ 0 & 0 & v_3 & 0 & 0 \\ \dots & \dots & \dots & \dots & \dots \\ 0 & 0 & 0 & 0 & v_n \end{pmatrix}$$

$$A = \begin{pmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \dots & \dots & \dots & \dots \\ a_{m1} & a_{m2} & \dots & a_{mn} \end{pmatrix}$$

$$M = \begin{pmatrix} m_{11} & m_{12} & \dots & m_{1n} \\ m_{21} & m_{22} & \dots & m_{2n} \\ \dots & \dots & \dots & \dots \\ m_{m1} & m_{m2} & \dots & m_{mn} \end{pmatrix}$$

then, the system of equations (3) and (4) above may in matrix symbols be written :

$$\tilde{P}_x = [P_x : P_m] [A : M] + \hat{V} \quad (5)$$

Given that matrices P_x and A , and matrices P_m and M are conformable, then equation (5) becomes :

$$\tilde{P}_x = P_x A + \tilde{P}_m M + \hat{V}$$

$$\tilde{P}_x [I - A] = [\tilde{P}_m M + \hat{V}]$$

$$\tilde{P}_x = [\tilde{P}_m M + \hat{V}] [I - A]^{-1}$$

$$= [\tilde{P}_m M \pm \hat{V}] [r_{ij}] \quad (6)$$

To keep value added as a constant fraction of the new selling price (the second price behaviour assumption) we have :

$$\tilde{P}_x = [P_x : \tilde{P}_m] [A : M] + \hat{V} \quad (7)$$

Once again, given the conformability between matrices P_x and A , and matrices P_m and M , equation (7) becomes :

$$\tilde{P}_x = P_x A \pm \tilde{P}_m M \pm \tilde{P}_v \hat{V}$$

$$\text{as } \hat{V} = \frac{\hat{V} P_x}{P_x} = V = \text{constant}$$

$$\begin{aligned} \therefore \hat{P}_x &= [\hat{P}_m M] [1 - A - \hat{V}]^{-1} \\ &= [\hat{P}_m M] [\cdot r_{ji}] \end{aligned}$$

III. THE APPLICATION OF THE MODEL

The model described above⁷ can now be used to estimate the impact of tariffs on costs of exportables in the Egyptian economy. The input-output table for 1967-68 was used.⁸ This table is based on the planned framework of output, inputs, and value added for the 1967-68 Plan. It encompasses 26 sectors, of which 18 sectors represent all the manufacturing industries in the economy.

On advantage of this table is that import flows have been divided into sub-sectors (26 × 26) with and without tariffs.⁹ This has made it easier to calculate an average tariff rate for each sector.

- 7) A similar model with different formulations has been applied to Denmark, using the 1949 input-output table, by P.N. Rasmussen. There are two main differences between this study and that of Rasmussen. The first is that this study deals with two possibilities in the firm price policy, while Rasmussen's example only deals with one of these possibilities. The second difference is that the Egyptian imports matrix is a detailed one (26 × 26), which gives imports of each commodity group, while the Danish input-output table has an imports vector which gives data only on the total imports by each industry. See P.N. Rasmussen, *Studies in Inter-Sectoral Relations*, North-Holland Publishing Company, Amsterdam, 1957, Ch. 5, pp. 70-84.
- See also Benjamin I. Cohen, "Measuring the Short-Run Impact of A Country's Import Restrictions on its Exports", *Quarterly Journal of Economics*, LXXX, August, 1966, pp. 456-462, where a similar model is illustrated using the 1953 Columbia input-output table.
- 8) Ministry of Planning, Central Division For Planning Balances, Input-Output Division, *Construction of an Input-Output Table for 1967/68 at Constant 1964/65 Producer Prices*, June 1971, (In Arabic).
- 9) *Ibid.*, Appendices 1 and 2, pp. 21-24.

Another advantage of this table is that each of its cells represents a bunch of commodities not industries. This is evident from its data which is mainly based on material balances data.¹⁰

Input-output tables based on an industry technology rely on the implausible assumption that the proportions in which an industry absorbs different intermediate inputs are independent of the proportions in which that industry is producing different goods.¹¹

According to the general formula (4) above, we now have a system of twenty-six similar equations; depending on the price behaviour assumption. To handle this large number of equations simultaneously, the computer was used to solve the relevant matrices.

In matrix notations and according to the general equations (5) and (6) above, we have the following :

$\bar{P}_x$ is a 1 x 26 matrix with elements $\bar{P}_{xj}$

$\bar{P}_m$ is a 1 x 26 matrix with elements $\bar{P}_{mj}$

P_v is a 26 x 26 matrix with elements a_{ij}

M is a 26 x 26 matrix with elements m_{ij}

I is a 26 x 26 identity matrix

Table 1 summarizes the final results of this exercise.

Column 1 represents the average tariff rate levied on inputs of each commodity group. The tariff rate is zero for those commodity groups where there are no imports at all, e.g. ginning and pressing, cigarettes, and electricity. High tariff rates on the average for beverages and agriculture are due to high rates on alcoholic drinks and tobacco, respectively. Consider the chemical commodities group for instance. According to the input-output table the total c.i.f. value of chemical imports was estimated at L.E.42,969 thousands; while customs duties

10) Ministry of Planning, *op. cit.*, p. 1.

11) For a detailed discussion of this point see: University of Cambridge, The Department of Applied Economics — A Computable Model of Economic Growth, *A Programme for Growth*, No. 1, July, 1962, pp. 66 - 69.

were estimated at L.E. 9,355 thousands.¹² Thus, the average tariff rate is : $9355 \div 42909 = 21.8\frac{3}{4}\%$.

Columns 2 and 3 show the direct effect of tariffs on prices of output in each commodities group under the two price behaviour assumptions. Again, to take chemicals as an example, the imported inputs coefficient per unit of output increased from 3.7 per cent to 4.6 per cent because of the tariffs levied on different imported inputs absorbed by a unit output of chemicals. This represents an average percentage increase in imported cost per unit of output of about 23 per cent. This will yield a direct increase in total costs per unit of output of 4.6 per cent ($0.2325 \times 0.19683 = 0.045765 \sim 4.6\%$), where 0.19683 represents the imported coefficient per unit of output. Likewise, given the second price behaviour assumption, the direct increase in total cost per unit of output (= direct increase in output price) is nearly 8.2 per cent ($0.2325 \times 0.353299 = 0.082142 \sim 8.2\%$), where 0.353299 represents the proportion of imported inputs to total inputs.

Columns 4 and 5 depict the total price increase, i.e. direct and indirect, under the two price behaviour assumptions. The figures included in both columns reflect not only the increases in each group price, which is shown in columns 2 and 3, but also the increases in other domestic prices due to the induced price increases in other commodities prices.¹³

A close comparison between columns 2 and 3 (direct effect) on one hand and columns 4 and 5 (total effect) on the other hand shows that on the average the direct effects catch more than three quarters of the total effect under the first assumption, while they capture only two fifths of the total effect under the second assumption.¹⁴ That is due to the high proportion of value added in the domestically produced inputs of most commodities.

12) Ministry of Planning ; op. cit., tables 1 and 2, pp. 21 - 34.

13) There is always in economics the analogy of a matrix multiplier with the scalar multiplier : $1/(1-a)$, where (a) stands for the marginal propensity to consume, cf. Richard Stone, *Input-Output and National Accounts*, O.E.C.D., Paris, 1961, p. 83.

14) Due to the high degree of aggregation in the Egyptian input-output tables the direct effects percentage to total effects may be somewhat over-estimated.

Table 1.—Impact of Tariffs on Domestic Prices of Exportables

(per cent)

Commodity Group	Tariff rate on output	Percentage increase in exportable prices								3 : 5	2 : 4	(8) 7.1 7.9 9.3 48.9 26.9 88.4 22.9 18.0 25.8 34.7 31.6 34.1
		Direct effects				Total effects						
		Case I	Case II	(3)	(4)	(5)	(6)	(7)				
									Case I			
1. Agriculture	123.7	(1) 1.0	3.1	1.9	26.7	52.6	11.6					
2. Ginning & pressing	—	0.1	0.1	2.1	26.7	4.8	0.004					
3. Mines & quarries	11.6	1.5	7.4	2.3	24.6	65.2	30.1					
4. Foodstuffs	26.2	17.3	20.2	21.4	43.8	80.8	46.1					
5. Beverages	316.7	4.3	6.6	10.3	34.8	41.7	19.0					
6. Cigarettes & Cigars	—	104.7	117.6	104.9	118.6	99.8	99.2					
7. Spinning & weaving	43.1	4.2	6.0	7.5	32.7	56.0	18.3					
8. Clothes & shoes	—	0.4	0.6	5.8	32.2	6.9	1.9					
9. Wood & wooden products	25.2	5.0	8.9	6.6	25.6	75.8	34.8					
10. Paper & cardboard	23.0	6.4	11.3	8.4	24.2	76.2	46.7					
11. Printing & publishing	10.4	5.8	12.0	7.5	23.7	77.3	50.6					
12. Leather & leather products (except shoes)	—	3.2	4.6	12.3	36.1	26.0	12.7					

13. Rubber products	18.6	9.2	15.6	10.6	15.7	86.8	54.4	39.7
14. Chemicals	21.8	4.6	8.2	6.8	24.8	67.6	33.1	27.4
15. Petroleum products	40.4	3.4	5.7	4.3	19.7	79.1	28.9	21.8
16. Non-metallic minerals	79.0	1.3	2.3	3.4	23.0	38.2	10.0	14.8
17. Basic metallics	25.9	8.4	11.6	10.0	23.7	84.0	48.9	42.2
18. Metallic products	39.5	3.5	5.4	7.8	25.1	44.9	21.5	31.1
19. Non-electric machines	15.9	4.3	7.2	7.9	25.0	54.4	28.8	31.6
20. Electric machines	35.0	8.5	13.9	11.4	29.3	74.6	47.4	38.9
21. Repair of transport means	37.9	8.4	12.9	11.3	27.4	74.3	47.1	41.2
22. Other manufactures	41.7	3.1	6.3	6.3	27.6	49.2	22.8	22.8
22 Electricity	—	3.7	11.0	4.5	25.8	82.2	42.6	17.4
24. Construction	—	0.2	0.4	2.7	21.9	7.4	1.8	12.3
25. Transport & communications	—	3.0	9.1	4.1	26.3	73.2	34.6	15.6
26. Other Services	—	1.1	4.8	1.9	23.3	57.9	20.6	8.2
Simple average		8.3	12.0	10.9	30.7	76.1	38.1	35.5

Furthermore, it is evident that the dispersion of the proportion of the direct effect percentages to the total effect percentages is very great in both cases. It ranges from 4.8 per cent for the ginning and pressing sector to 99.8 per cent for cigarettes and cigars. Under the second assumption of pricing policy, the range of dispersion of the direct effect percentages to the total effect percentages is between less than 0.01 per cent in the ginning and pressing sector to 99.2 per cent for cigarettes and cigars. This reflects the wide range of inputs and value added coefficients among different commodity groups.

Of some interest is the comparison between column 4 and column 5 in table 6.1. Once more, column 4 indicates the total effect of the price increases of imports when the firm keeps its value added payments per unit of output constant, while column 5 demonstrates the total effect of such price increases when the firm changes its selling price so as to keep its value added payments per unit of output a constant percentage of the selling price. From table 6.1, column 8, it is obvious that the percentage increase in output prices in the first case is on the average 35.5 per cent of the percentage increase in the second case. One important implication of this result is that, given fixed monetary and fiscal policies, the increase in output prices under a relatively competitive market system would be lower than under a less competitive system with less market forces in operation. For the Egyptian economy, therefore, where there is relatively little competition, a single firm would probably increase its selling price by the same amount as the increase in its raw material costs.¹⁵ However, the behaviour of all firms as a whole clearly would depend on what monetary policy accompanied the increase in import prices.

One should emphasize, therefore, that the first case (column 4) represents the minimum level of price increases of exportables due to tariffs on imported inputs. Other assumptions could be made about the domestic firms' behaviour with much higher increases in the price of potential exports as a result of the increase in imported inputs. In view of that, case two (column 5) obviously is only one possible situation among others that involves higher price increases.

15) For a full discussion of wages and profit policies in Egypt see: Bent Hansen and Girgis A. Marzouk, *Development and Economic Policy in the UAR (Egypt)*, North-Holland Publishing Co., Amsterdam, 1965, pp. 138 - 144.

Actually, most of the Egyptian exports are from those sectors which have the lowest direct and total effects percentages. The most important items in Egypt's exports are agricultural products, spinning and weaving, petroleum products, and non-metallic mineral products. These items have total effects ratios under the first assumption of 1.9 per cent, 7.5 per cent, 4.3 per cent and 3.4 per cent respectively. The average impact of tariffs on the output prices in these export sectors is only 4.3 per cent, which is less than two fifths of the average for the whole economy.

There is little doubt that the competitiveness of these export sectors in the world market is much stronger than that of the rest of the sectors. Table 1 does suggest that one factor behind this relatively competitive position is the relatively low level of tariffs on imported inputs and the relatively small total effects ratios.

One of the main causes of the noticeable weakness of Egyptian exports' competitiveness appears to be the relatively high prices of its exports that are due to high costs.¹⁷ A reliable study estimated that Egyptian exports prices, are on average between 15 per cent and 40 per cent¹⁸ above the world market prices. This may confirm the results given in table 6.1.

Doubtless, many governments in many developing countries are aware of the interaction between customs duties and export prices. Consequently, in many countries some exports enjoy a refund of all or some of the duties imposed on imported inputs purchased by these exports.

In Egypt, an exporter is entitled to a "drawback" of some or all of the customs duties paid on foreign materials for the production of some export commodities. To qualify for the drawback, these export

16) cf. Central Agency for Public Mobilization and Statistics, *Foreign Trade Development During the Five Years of the General Plan for Economic and Social Development — July 1960 to June 1965, 1965/66, and 1966/67*, Ref. No. 02-600, Cairo, May 1968 (in Arabic).

17) N. Kilada, *Tariff as a Tool of Economic Policy*, Monshaat Al Maaref, Alexandria, 1965, pp. 522-528, (in Arabic).

18) Fouad Moursi, "The Organization of Foreign Trade", *L'Egypte Contemporaine*, July 1967, p. 18, (in Arabic).

ables must be exported within twelve months from the date on which the duties on foreign materials were paid.¹⁹ According to different studies and sources, however, many firms in the public sector do not take advantage of the "drawback" system because of long delays and bureaucratic complications involved in applying their strict conditions.

Nevertheless the customs authorities actually do not give exporters refunds on imported inputs purchased by domestic firms which sell to the exporters. In terms of this analysis, the exporter is compensated only for the direct effects of higher import prices. These direct effects as shown in table 1 are, by definition, less than the total effects of the cost increase. To the extent of the difference between the two effects, direct and total, the competitiveness of the domestic exporter will be less than what would be under no tariffs at all, even if he gets a full compensation according to the present system of "drawback".

Table 2 depicts the impact of tariffs on domestic prices of exports assuming full drawbacks to domestic exporters on all exports in both cases.

The drawback system has reduced the simple average of price increase to nearly 3 per cent and 19 per cent under the two price behaviour assumptions respectively.

It should be mentioned, finally, that some recent empirical studies have shown that unit costs and prices of most developing countries, industrial products are too high for profitable exporting. The reasons are partly to be found in high costs of final products due to heavy duties on imported materials and to high rates of protection of domestically produced materials.

19) For details see : U.A.R., Ministry of Treasury, Customs Law, No. 66, 1963, (in Arabic).

20) N. Kilada, *op. cit.*, p. 565.

21) Barend A. De Vries, "International Price Comparisons of Selected Capital Goods Industries", in D.J. Daly (ed.), *International Comparisons of Prices and Output*, Studies in Income and Wealth, Vol. 37, National Bureau of Economic Research, New York, 1972, pp. 336 - 349 ; but see also comment by David Felix in the same volume, in which he challenged some of the implications of De Vries's findings.

Table 2.—Impact of Tariffs on Domestic Prices of Exportables With
Full Drawback of Direct Price Increases

	(per cent)	
	Case I	Case II
	(1)	(2)
1. Agriculture	0.9	23.6
2. Ginning and pressing	2.0	26.6
3. Mines and quarries	0.8	17.2
4. Foodstuffs	4.1	23.6
5. Beverages	6.0	28.2
6. Cigarettes and cigar	0.2	1.0
7. Spinning and weaving	3.3	26.7
8. Clothes and shoes	5.4	31.6
9. Wood and wooden products	1.6	16.7
10. Paper and cardboard	2.0	12.9
11. Printing and publishing	1.7	11.7
12. Leather and leather products (except shoes)	9.1	31.5
13. Rubber products	1.4	11.1
14. Chemicals	2.2	16.6
15. Petroleum products	0.9	14.0
16. Non-metallic minerals	2.1	20.7
17. Basic metallics	1.6	12.1
18. Metallic products	4.3	19.7
19. Non-electric machines	3.6	17.8
20. Electric machines	2.9	15.4
21. Repair of transportation means	2.9	14.5
22. Other manufactures	3.2	21.3
23. Electricity	0.8	14.8
24. Construction	2.5	21.5
25. Transport & communications	1.1	17.2
26. Other services	0.8	18.5
Simple Average	2.6	18.7

IV. THE ASSUMPTIONS AND PROBLEMS IN THEIR MODIFICATION

The assumptions underlying the model are mainly those implied by input-output analysis in general terms.²² However, some of these assumptions need to be closely examined as their validity affects the results in the previous section.

A. A static input-output analysis, such as the present one, assumes fixed input structure, i.e. no substitution among inputs. The substitution problem has been the subject of extensive examination in most of the developed countries. It was found that the input-output tables of the U.S.A., for example, need not be revised except perhaps every ten years.²³ But the crucial point here is to what extent this is valid for a developing country like Egypt. Technical coefficients could be changed as a result of any change in relative prices, or technology or scale of production. All of these factors are, in fact, interrelated. It is most likely, therefore, that as a developing economy drives towards industrialization and modernization a continuous change would take place in the technical coefficients. According to Eleish : "owing to the present structure of the Egyptian economy and the future development of that economy, the frequency of changes in the technical coefficients will be more than it is in a developed economy like that of the United States."²⁴

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- 22) The assumptions underlying input-output techniques of the type used in this study have been discussed at length in inter-industry analysis literature ; see for example Hollis B. Chenery and Paul G. Clark, "Interindustry Economics", John Wiley & Son, Inc., London, 1959, pp. 33 - 42.
- 23) Gamal E. Eleish, "The Input-Output Model in a Developing Economy : Egypt", in Tibor Barna, *Structural Interdependence and Economic Development*, Proceedings of an International Conference on Input-Output Techniques, Macmillan and Co., London, 1963, p. 205.
- 24) Gamal E. Eleish, *The Applicability and Utilization of The Input-Output Model in A Developing Economy, The Case of Egypt Examined*, Paper prepared for International Conference on Input-Output Techniques, 11 - 15 Sept., 1961, Geneva ; Reprinted as Memo. No. 168, Institute of National Planning, Cairo, March 1962, p. 12.

However, in the short-run, substitution among inputs is bound to be reduced to a level which could be of a negligible magnitude. Furthermore, the view of the Ministry of Planning in Egypt is that although technical coefficients by subject to some change these changes would not be so significant as to invalidate their use for planning purposes.

Nevertheless, the model could be used to estimate the impact of increases in input prices on exports in the long-run by employing a dynamic version of it. The model might be dynamized in different ways to indicate the speed and the path by which the new equilibrium prices are achieved.²⁵

B. Another key assumption implied in the above analysis is that output prices are equal to their costs and that an increase in unit costs, including capital costs and profits, leads to an equal price increase.

W. Evans and M. Hoffenberg²⁶ have argued that this theory of pricing may be too primitive to give a realistic description of pricing decisions in the short-run, when both demand and strategic competitive considerations have a strong influence. However, as they pointed out, "these cautions apply with less force to an analysis of the expected consequences of broader changes in factor costs over longer periods, or to efforts to identify factors that may prominently affect or determine price changes for a given sector. They apply hardly at all to a *de facto* analysis of causal interconnections in historical price movements".²⁷

For exports, given the commercial policies employed, these conclusions are applicable to the present analysis.

25) Rasmussen gives a numerical example assuming a given increase in wages which is followed by a change in output prices and accordingly a change in the cost of living. This process may be considered over a number of periods. Rasmussen, *op. cit.*, pp. 65-67 & 78-84; for a general exposition see B. Hansen, *Lectures in Economic Theory*, Part I, Institute of National Planning, Cairo, 1964, pp. 117-125.

26) W. Duane Evans and Marvin Hoffenberg, "The Nature and Uses of Interindustry-Relations Data and Methods", in *Input-Output Analysis: An Appraisal*, Studies in Incomes and Wealth, Vol. 18, Princeton University Press, New Jersey, 1955, pp. 53-125.

27) *Ibid.*, pp. 99-100.

C. Finally, the preceding analysis assumes that changes in the price of a certain commodity are independent of the destination of the flow of this commodity. This assumption has its implications to the structure of export subsidies.

In Egypt, there is no stable and consistent policy of export subsidies. Export subsidies were initiated in 1953 by establishing a special "Fund" to subsidise exports of domestic cotton yarn and textiles. This was followed in 1955 by new duties imposed on imports of leather and tobacco products to create a financial source for subsidising their exports in 1956 and 1957 respectively. In 1957 a "Fund" for exports in silk yarn and textiles, similar to that of cotton yarn and textiles, was established. However, successive amendments and frequent changes caused a great deal of fluctuations in all kinds of subsidies which caused a large degree of instability and had little effect on the competitive position of the Egyptian exports in the world market.

Even for exports of cotton yarn and textiles, which is the largest item, subsidies were limited by the total proceeds of a 6 per cent duty imposed on domestic raw cotton used by spinners. This type of duty-subsidy tax, in fact, cancels its final effect out from the whole economy point of view.

Furthermore, subsidies in cotton manufactures have been decreasing over time in recent years. They decreased from L.E. 8.8 million in 1968 to L.E. 5.9 million in 1969, and to L.E. 3.7 million in 1970-71.²⁸

From what has been said it is unlikely, therefore, that the present structure of subsidies in Egypt would change the results significantly.

28) Wagdy M. Hussein, "The Role of Exports in Economic Development, With Special Reference to the U.A.R.", Ph.D. Thesis, Dar Al Gameaat Al Misria, Alexandria, 1973, p. 544, in Arabic.

V. CONCLUSION

The main purpose of this paper was to discuss, measure and analyse the relationship between tariffs and export costs, given the productive capacity, the composition of output and the exchange rate. Tariffs on imported inputs proved to be an additional burden on exporters. There was on these assumptions a considerable increase in domestic costs of exportables which reduced their competitiveness in the world market. Even with the assumption of a full drawback of import price increases in the direct inputs of export industries, the average increase in costs was estimated to be 2.6 per cent and 18.7 per cent under the two main assumptions of firms' behaviour respectively. If account could have been taken of the fact that the drawback system was by no means comprehensive and, even when available, was not costless to the exporter, and also of the fact that the existence of heavy protection almost certainly supported an overvaluation of the Egyptian pound in relation to the free trade position, considerably larger figures would probably have been obtained. The comparable percentages calculated by assuming no drawback were 10.9 per cent and 30.7 per cent respectively.

The main lesson to be drawn is that, given the minimum level of substitution of imports, industrial growth in Egypt becomes increasingly a sole function of export growth. And in view of the evidence provided here a substantial increase in many exports proved to be well-nigh impossible, particularly manufactured exports. This is due mainly to the high cost of domestically produced goods which was originally caused by tariffs.

Finally, the validity of the numerical results was tested against some actual features of the Egyptian economy. There were some minor changes, but the whole line of argument seems to hold. The magnitudes of the results appear to be consistent with available factual evidence.



AGRARIAN REFORM : A MODEL AND THE MIDDLE EASTERN EXPERIENCE

by

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I. Introduction

Analysis of the outcome of land reform programs (either in the narrow or broad sense)¹ has remained intrasectoral. It has focused on the narrow goals of reform proper : increased justice (in terms of distribution of land), higher rural incomes, improved agricultural productivity, and so on. However, many theories of economic development have been based on the contribution made by the agricultural sector, not only to itself, but directly and indirectly to the total economy. Economists from Adam Smith to Albert Hirschman have argued that the agricultural sector can be the *deus ex machina* to fire industrial growth. Yet the connection between land reform, performance in the agricultural sector, and industrial development has not been adequately demonstrated. Our purpose is to focus on the various connections and relationships that might involve the effects of land reform. We will first examine the direct effects on the agricultural sector and then analyze some of the intersectoral forces for reform programs of several Middle Eastern countries.

II. The Impact of Land Reform : A Model

Land reform may be narrowly viewed as merely the redistribution of land or, more broadly, as the introduction of new inputs and institutional changes in agriculture. Thus, in the agricultural sector, land reform will affect output, rural income, and employment. Such mechanisms are well known and need no further elaboration.

But resulting changes in the income differential between the agricultural and the industrial sector will also affect the rate of rural-urban migration. And the change in migration will usually have an effect on the wage rate, and thus on industrialization.

An increase in agricultural output resulting from land reform may, at first, change the terms of trade in favor of the industrial sector. This will encourage an increase in industrial production. Also, with the additional demand for industrial goods coming from a wealthier hinterland, such a change in the terms of trade will be reinforced. At the same time, however, the assumed higher agricultural yields and reduced production costs could result in increased rural incomes which might retard migration and cause a rise in the urban wage rate. Increased urban wages would retard industrialization and shrink industrial profits; thus industrial investment would also be negatively affected.

Lewis (1954), in his classic article, assumed away the impact of rising agricultural incomes on industrialization. However, Hagen (1968) and others have clearly pointed out the possibility of such interaction. What has been missing from this analysis is the connection of land reform to such ends. It can be shown that land reform could have an effect on both agricultural production and rural incomes. In addition, the government subsidies found in a broader program of land reform could have additional impact on rural incomes, in the form of both direct and hidden incomes. We shall concentrate on the effects of these increases on the rate of urban migration.

As hypothesized by Harris and Todaro (1970), the difference between expected urban income and rural income influences the migration rate. As the gap increases, the rate of migration will also rise and hence, the size of the urban labor force would, *ceteris paribus*, become larger. If urban wages initially climb relative to agricultural wages, the industrial-urban sector would now attract rural migrants whose numbers will be more than enough to satisfy the additional demand for urban workers. Yet it is possible that land reform and government subsidies may increase rural incomes. Therefore, with such an increase

in rural income we might suspect that the rate of migration will fall, particularly if we assume a constant urban wage rate. However, although rising rural incomes may subsequently reduce the rate of migration, the over-supply of urban workers would have already depressed the urban wage rate. The key to understanding this seemingly paradoxical situation whereby rural wages increase, migration declines, but urban wage rates still remain low because of an excess in urban labor force depends on (a) initially offering a high urban wage to attract rural workers, and (b) the more than sufficient amount of workers who subsequently are induced to migrate, despite the eventual decline in urban wages and increase in rural incomes.

The consequences of this migration for the agricultural sector depend on whether the migrants originally were unemployed or underemployed. If their marginal product of labor was zero, then a decline in the agricultural work force through urban migration will have no deleterious effects on agricultural productivity. Any further migration could affect rural production unless labor-replacing technologies are adopted through increased capital investment. On the one hand, some new techniques, such as fertilizers, high-yield seeds, and improved irrigation methods, may actually require additional farm labor. On the other hand, mechanical technologies, such as tractors, threshers, and the like, will displace workers.⁽²⁾

Thus, many of the urban migrants may represent workers displaced by rural capital investment. At the same time, members of families who received portions of land through the redistribution program and now are no longer needed on the reappropriated large estates are free to migrate to the city. In addition, those who receive little or no land are likewise displaced from estate and other local employment; in order to survive they must also migrate.

In this way, migrant laborers in the urban sector become one of the linkages between the rural and urban sectors. In turning to a consideration of the effects of land reform on the urban sector, then, workers released from the rural sector because of the breakup of estates and the redistribution of land might be expected (if their incomes drop) to stream into the city, de-

pressing urban wages. This in turn could spur industrial production, given the presence of other needed inputs for industry. In addition, production could be boosted by changes in the terms of trade favoring industry, resulting from an increase in agricultural productivity which is assumed to result from land reform and rural development. At the same time, the greater consumer power of those farmers whose incomes benefit from reform means an expanded rural market. This market could provide further incentives to industry. Thus, industrial production can profit simultaneously from beneficial terms of trade, lower labor costs, and a rapidly growing consumer market in the hinterland.

As industrial production increases, the terms of trade could again change, this time in favor of agriculture, which would then accelerate rural production. Since there would now be a larger number of urban workers, there would be a growing urban market for agricultural goods. Further capital investment and easier credit arrangements might release even more rural workers, not only with no subsequent loss in production, but instead with an overall increase in farm output.

Thus, we can see that both sectors are intimately tied together. With land reform as the initiating program, workers released in one sector provide an ample labor supply in the other (depending on the impact of land reform on rural incomes), lowering relative labor costs and furthering sectoral growth. Capital accumulated in one sector could move toward the other. Favorable terms of trade in agriculture would spur production in that sector until the benefits tilt in favor of industry, which would then be motivated to increase its production. Rising consumer demand in one sector could provide a market for goods from the other. The key factors, then, include the labor supply, the operation of internal markets, the investment of capital in technology, and the terms of trade. Thus, according to our model, land reform is not only tied to rural development, but has at the same time a crucial influence on rural incomes, migration, rural birth rate, and on industrial development. The growth of the two sectors is necessarily uneven, depending on lags in wage adjustment, labor shifts, flows of capital, and alternating changes in the terms of trade.

The policy implications of this discussion are simple but nonetheless very important. Besides the effect of such factors as the amount of redistributed land, the size of the post-reform holdings, the degree to which conditions are eased, the construction of irrigation facilities, etc., on agricultural yield and income, policy makers must also evaluate the resulting cross-sectoral influences. They must incorporate the effect of changes in agricultural output and rural income on rural-urban migration and, in turn, industrialization. Land reform cannot be viewed merely as increasing social justice or agricultural output, but it must be seen in the context of a model with many interactions. If some outcomes are undesirable to the policy maker, then additional counteracting measures may be needed. As an example, if urban unemployment is initially very low, then additional migration may be desired. Thus land reform may be coupled with a policy to encourage migration instead of initially stifling it. On the other hand, if urban unemployment is already high, the slowdown in migration may be viewed as a secondary benefit of land reform, and its continuation be reinforced. A policy of property tax or wage taxes can either encourage or inhibit migration. Coupled with a policy of food subsidies, these two programs not only affect migration, but resolve distributional problems as well. Such consequences favor the need for overall planning — both rural and urban development — rather than limiting policies to one sector or the other. Unfortunately, practitioners of land reform have often neglected to view such reform as a part of the total development picture.

It remains necessary, therefore, to test this model empirically. The Middle East, as a major arena for economic and social development, provides an enlightening laboratory. Four of the larger countries in that region — Egypt, Iraq, Syria, and Iran — have committed themselves to major land reform programs. These programs have radically altered the relationships both between incomes and costs on the one hand, and the rural and urban sectors on the other. Yet testing this model empirically is difficult. What we shall do, then, is to emphasize elements of land reform which, *ceteris paribus*, can influence and alter the relationship between the variables. But all things are not equal and thus our endeavour now will only be an initial investigation, saving more rigorous methods for future research.

As far as direct incomes are concerned, the greatest effect of land reform programs is its influence on production. Assuming fixed market price after reform, increases in production should be reflected in the gross income of peasant farmers. At the same time, the distribution of ownership rights to parcels of land might ultimately lower one of the major costs of production: the cost of that portion of production forfeited to the landlord. Not only does distribution thus immediately result in lower annual costs, but equity may eventually reduce production costs even further.⁽³⁾ Finally, increases in hidden incomes derive from infrastructural improvements and better social services. One of the major organizations which channels these benefits is the government-sponsored cooperative, providing the major link between the peasant and the government.

Thus, in order to measure changes in direct income, we will look at the effects of land reform on agricultural output, the distribution of health and its impact on lowering the cost of land; one of the five costs peasants must pay. We shall also discuss the role and expansion of the cooperative movement as the chief means of increasing hidden incomes. Finally, we will briefly examine the impact of the resulting changes in rural income on rural-urban migration.

III. Impact of Land Reform in the Middle East

We must initially assess the impact of land reform on agricultural output and rural income. Askari and Cummings (1976) used a Nerlove (1958) supply model in this connection. They estimated short- and long-run price elasticities of yield and area for three countries, both before and after land reform. Estimates were made for several major crops including wheat, barley, rice, maize, milled, potatoes, onions, broadbeans, lentils, cotton, and sesame.

Area response in Egypt went unchanged from the pre-reform to the post-reform periods, a result expected in light of the fact that even with the completion of the Aswan High Dam, potentially cultivable land in Egypt is still very limited. However, changes in yield elasticities were positive. The only crop to show an increase in area response after land reform was broadbeans, but onions, broadbeans, wheat, cotton, rice, and

maize all reflected large positive shifts in yield response. The shift in these values bridging the reform period is both notable and consistent for all crops considered. While land reform may have given a temporary boost to initial agricultural production, the potential for increasing the already high Egyptian yields are limited. While water projects and land reclamation in the Western Desert are becoming a reality, further increased production will need the benefits accrued from the industrial sector. Hence urban planning and industrial development need to be emphasized even more than in the past.

The Egyptian case of higher post-reform farmer responsiveness to prices is not clearly duplicated in Syria, where the effort required to bring additional marginal land under production is minimal, but production on this land tends to lower average yields. The authors expected shifts detected using the area version of the supply model to be reversed when the yield version was tested, and this expectation was in fact borne out. Post-reform area elasticities were higher for wheat and cotton, the major cereal and cash crops, as well as for four minor crops — millet, maize, chickpeas, and onions. However, they were lower for barley, the second most important cereal, and for three minor crops — sesame, potatoes, and vetch. Thus, the results of land reform appear to be mixed when measured in price elasticity terms, though the authors felt that Syrian farmers, on balance, showed a positive shift in responsiveness after land reform.⁽⁴⁾

In Iraq, where the fervor of revolutionary reform was counter-balanced by a lack of rational administration and planning and internal security problems connected with the long Kurdish revolt, the picture is somewhat equivocal. Definite post-reform increases in responsiveness are indicated for lentils, giant millet, and sesame, with the yield model showing signs of a similar improvement for barley and rice and perhaps millet, greengram, and cotton. Only wheat and linseed show definite declines in responsiveness, due perhaps in part to effects of the Kurdish war in the northern wheat-growing region. While Iraq has suffered from inadequate infrastructure and lack of sufficient capital to reclaim salinized land, future improvements may be forthcoming since higher oil revenues and multi-sectoral planning now make possible significant improvements in agricultural productivity.

The results of this analysis may not be definitive, but it does seem that peasants at least in Egypt and probably in Syria show a reasonably consistent shift toward greater price responsiveness after land reform. While Iraqi land reform is generally depicted in less than favorable terms, the supply response analysis is not at all uniformly negative. When Iraq is compared to its non-land reform neighbors (Jordan and Lebanon) there are signs of favorable market implications emerging from its land reform program.

Thus the effect of land reform on market responsiveness, assuming a constant or increasing price of agricultural goods, could mean higher incomes for peasant farmers. This, of course, depends on the distribution of the gross receipts for the farmer's commodities. We might follow Fisk (1964) in assuming a constant cost of commercial activity. Both area and yield increases may lead to higher direct incomes. This extra income could be used to improve the standard of living, invest in either local or urban enterprises, and reduce the rate of migration to the cities.

If the evidence for the effects of land reform on production are somewhat ambiguous, the impact of the redistribution of wealth on the peasants is more clearly identified. In a recent study, Askari, Cummings, and Toth (1977) analyzed the pricing of land and its consequences for peasant incomes. They concluded that in all three of the above countries, peasants benefited from a reduction in the cost of land. For the most part, the redistribution programs meant giving land to peasants who heretofore had rented land from large estate owners, either on a fixed rent or share basis. Thus, instead of determining whether the value of the land was above, below, or equal to the actual market price, the problem reduces to calculating the post-reform purchase price as a function of pre-reform rental costs. In the three countries, the price of land had been set at ten times the annual rent (X); the exception was Iraq, which offered land at what was termed a fair market value. Thus, the only differences among the countries were the interest rate and the period of repayment encountered by the cultivators who received land, and by the landlord who was compensated.

In Table 1, a summary of the results is shown; the numbers in parenthesis indicate the ranking for each country of the

TABLE 1 : Middle Eastern Land Reform*

Country	Ratio of Land Distributed to Land Under Cultivation	Pricing of Land	Discounted Value of Payment to Landlord	Discounted Value of Payment by the Peasant
Egypt	0.178 (3)	Undervalued (1)	1964 3.34×	3.83×
			1952 2.18×	2.38×
			1958 5.23×	1.06×
			1961 0.41×	0.04×
Syria	0.177 (4)	Overvalued (4)	5.42× (3)	2.44× (2)
Iran	0.190 (2)	Undervalued (2)	5.97× (4)	2.66× (4) 11.82×
Iraq	0.238 (1)	Near Par (3)	1.99× (1) 3.44×	1.58× (2)

Source : Askari, Cummings and Toth (1977).

×denotes annual rental on the land.

redistributionary effect (on income) of each factor — ratio of land redistributed, pricing payment to landlord, and payment by the peasant. Clearly land reform in Egypt and Iraq had a large redistributionary effect on income and raised rural incomes. In Syria, the redistributionary effect was somewhat less because the land was slightly overvalued, which reduced the beneficial impact of getting the land on such good terms. In Iran, the terms look very bad for the peasant but they are somewhat compensated for by the very underpriced value assigned to the land. All in all, the peasant did much better in Egypt and Iraq.

The conclusions reached agree with historical intuition. In both Iraq and Egypt, land reform and its implementation followed popular revolutions, whereas in Syria and Iran there was no such pressure. Revolutionary ideology was probably responsible for the initial low cost of land to Iraqi peasants, and a factor in leading Nasr, in 1961, to improve the repayment terms of the Egyptian *fellahin*. In Syria, however, revolutionary fervor declined after the abrogation of its union with Egypt in 1961. Iran's land reform program was initiated by the Shah himself as a deliberate policy.

In addition to a direct reduction in the cost of land — not only in terms of annual payments, but with the additional benefit of receiving equity after the retirement of the mortgage — land reform programs benefit the hidden incomes of peasants as well. These gains come from programs included under the broader sense of land reform mentioned earlier. They include such items as rent control, wage stability, easier credit terms, increased use of fertilizers, pesticides and herbicides, improved water control (both irrigation and drainage), mechanization, and high-yield seeds. There are improvements in the rural infrastructure as well, such as housing, transportation, schools, health clinics, and extension services. In addition, features of many large programs of rural development like roads and dams provide important sources of rural employment.

Many of these extras are provided, at least in part, through an integrated program of organizing cooperative associations. They are often initiated as marketing organizations for the more important crops such as wheat, barley, rice, and cotton, and are organized by the government to coordinate production and

distribute the returns on agricultural output. In the Middle East, not only were the benefactors of redistributed land required to join cooperatives, but eventually non-reform villages were included as well.

The primary benefits of developing community-wide cooperatives are related to economies of scale. Gadalla (1962) reported that in Egypt there was an estimated 13.2 percent increase in yields due to more efficient production alone, with the greatest gains coming from the use of high-yield seeds and fertilizers and from labor coordination. Whether cooperatives responded to a need to improve lower post-reform yields or were a means of adjusting to the effects of rural-urban labor migration, invested capital stands to gain higher returns if it is channeled into large-scale operations. Under the terms of land reform laws, capital is obtained through the cooperative association. Unable to use land acquired through redistribution as collateral until all government debts are paid in full, peasants can gain easier credit arrangements only if they are members of cooperative associations. Thus, many of the hidden costs of a broad program of land reform are channeled through cooperative organizations.

The cooperative movement has not proceeded equally in all four countries. In Egypt, the government actively supported the cooperative program as a means to establish a substitute landlord while actual land titles were being determined. Since 1955, all redistribution has been effected through cooperatives, state farms, and more recently, private agri-business. While 1,727 cooperatives existed in 1952, this amount had almost tripled by 1965, with the number totalling 4,839, with close to 2.4 million members. Over the next five years, the annual rate of establishing new co-ops had increased by almost 50 percent (Abdel-Fadil, 1974). The Syrian government has made cooperative membership mandatory for everyone receiving land, as well as for those already owning farms above a certain size. Before the union with Egypt in 1958, a few cooperative associations existed as private enterprises, but within a year, the number of organizations more than doubled, while the membership increased 27 times (Garzouzi, 1963). Before its 1958 revolution, Iraq saw little concerted effort to establish cooperatives, even in resettlement projects. Five years later, the number of cooperatives had increased 18 times and membership 17

times. After 1963 the major emphasis of officials was on establishing more cooperatives as the best method of revitalizing the land ; as many as 140 co-ops were founded annually. However, perhaps because of this rapid rate, they frequently suffered from poor planning, little consideration of local needs, and an inability to extend credit.⁽⁵⁾ The Shah's White Revolution included the creation of cooperatives as a primary mechanism for purchasing land. Within a year after the program was initiated, responsibility for them was transferred from the Bank for Construction and Agricultural Assistance to a new agency, the Central Organization for Rural Cooperatives. Between 1963 and 1970 the number of cooperatives increased eight-fold to more than 8,300. Their major responsibilities have been on the input side, rather than marketing production.

The trend in establishing cooperative associations seems to follow the same fluctuations as do land redistribution programs. Where reform programs followed popular revolutions, such as in Egypt and Iraq, cooperative organization began at a slow pace, though quickly increasing, perhaps even to the point of inefficiency. On the other hand, Iran and Syria began more rapidly, only to decline as the reform fervor wore off. In general, cooperatives were organized partly out of the realization that previous landlord-operated units benefited from centralized management and economies of scale, and partly because they were also an efficient means of accumulating capital for both agricultural and industrial investment. As cooperatives increase in size and expand in number, they are better able to provide benefits and assistance to peasants. Not only might these organizations lower such production costs as fertilizer, water delivery systems, machinery, and seeds through economies of scale, but also such social expenses as housing, schooling, transportation, and public health. These gains may not be directly available to the peasant, but may free other incomes otherwise tagged for such expenses, making it available for the purchase of goods and services and/or investment.⁽⁶⁾

We have looked at the effects of land reform on increased agricultural interaction with the market and thus on direct incomes, on decreased land costs and the cost of production, and on the increasing role of cooperative associations, and thus, on hidden incomes. If land reform raises the two incomes and

lowers production costs, then the net income in the peasant family should be higher as a direct result of the reform program. The rankings of Egypt, Iran, Iraq, and Syria for increased crop output is 1, 4, 3, 2 ; for expanding co-ops is 1, 2, 3, 4 ; for lower land costs initially is 3, 4, 1, 2 ; and for lower land costs over the longer run is 1, 4, 2, 3.

Thus we could make an initial hypothesis that migration to the cities should be highest in Iran followed closely by Syria and somewhat further behind by Iraq and Egypt. Sophisticated computations for such migration are, not surprisingly, unavailable for these four countries, but at least estimates can be cited. Some figures can be drawn from a study (Davis, 1969) which applied standardized procedures on a worldwide basis for the period 1950-1970. Using them in this case produces mixed results. The estimates for Iran are the highest (3.1 percent for 1950-1960 and 2.8 percent for 1960-1970), but Egypt is not much lower (2.7 percent for 1950-1960 and 2.5 percent for 1960-1970), while Syria shows the lowest rate of migration (0.7 percent in each period). Egypt is probably somewhat high, *ceteris paribus*, because of its uniquely high rural population densities. It has been estimated, for example, that construction of the Aswan Dam complex barely provided enough additional land to provide livelihoods to the natural increase in rural population during its construction period. Such severe pressure is simply not felt in Iran, Iraq, and Syria. One explanation for the low estimates for Syria could be the relatively sparse rural population densities. While its southern provinces are fairly heavily populated, the northeast Jezirah region offers a frontier atmosphere, which has proven particularly attractive to settlers as work on the massive Euphrates Dam project has proceeded.

However, other evidence, while not drawn from standardized sources, offers somewhat stronger support for our basic hypothesis. Using data drawn directly from the two most recent censuses, we can estimate the urban migration rate to be about 4.1 percent for Iran (1956-1966), about 2.9 percent for Syria (1960-1970), and about 2.35 percent for Egypt (1960-1966).⁽⁷⁾ Then, taking the most recent United Nations population estimates for each country, we can calculate migration rates of 3.9 percent for Iran (1966-1971), 2.3 percent for Syria (1970-1975), and 1.2 percent for Egypt (1966-1974). These

results lend strong initial support to our hypothesis regarding at least one of the linkages of land reform to the industrial sector, that is through the effect on migration. Thus, at least as a first approximation, recent Middle Eastern experience is consistent with our model of the interactions of land reform.⁽⁸⁾

IV. Conclusions

Agrarian reform has been, by and large, viewed by most authors in very narrow terms ; in most cases, economic interest in land reform has centered around its impact on agricultural production and income distribution.⁽⁹⁾ However, the ramifications of land reform are much more widespread. The linkages between the rural agricultural sector and the urban industrial sector are many. We have looked primarily at migration as a means of adjusting the supply of labor to the demands of increased or reduced production. Of equal importance are such factors as the changes in commodity market prices, inter-sectoral capital movement, and cross-sectoral market demands.

We have proposed a model and performed some simple tests for the Middle East by measuring such key items as increased production, lower land costs, and the expansion of the cooperative system. Insofar as land reform's effect on agricultural production is concerned, we concluded that land reform has positively affected production in Egypt, and to a lesser extent, in Syria. While Iraq shows equivocal results, a comparison with non-reform neighboring countries indicates some positive gain in market response. In comparing land prices with pre-reform rents, we have also found that in all four countries (except possibly Iran, if officially declared pre-reform rents are used as the criterion), the peasants gained lower annual land payments. The relative improvement seems greatest in those countries experiencing popular revolutions, Egypt and Iraq. Finally, we considered the role of cooperative associations in providing many benefits to the peasant, improving rural infrastructure, increasing the standard of living and providing important social services, with the expansion of these associations indicating a rise in the hidden peasant incomes. The rise in both direct and hidden incomes and the decline in production costs should, *ceteris paribus*, result in a larger net income for peasant farmers. As not income rises, the rate of migration

should decline, at least relatively, as long as expected urban wages remain constant. Tentatively ranking Egypt, Iraq, Syria, and Iran, respectively, in descending order, we then found some indications in recent rates of migration for this ranking. But since these three variables (yields, land cost, and cooperatives) hardly solve the problems encountered in trying to operationalize our model, it is not surprising that the results predicted by our model are not unequivocally borne out by available data. At the same time, the model brings forward several significant factors whose consideration seems essential for economic planners.

It is clear that a land reform program requires multi-sectoral planning. Land reform without industrialization may result in emigration, while industrialization without land reform may encounter severe bottle-necks. For example, response to workers' needs may not be forthcoming because of inadequate agricultural production. Urban migration can be an important tie between the two sectors. An initially high urban wage may attract rural peasants despite the benefits accruing from land reform and increased net incomes. At the same time, a policy of wage taxation may discourage migrants. If agricultural production were to decline with migration, then such a tax policy might benefit the rural sector until capital intensive technology could replace workers.

In essence, though microanalysis of the causes of urban migration is lacking, we can conclude that in the Middle East, land reform has not only affected production and income distribution, but also rural-urban migration and thus industrialization. While many reform movements were initiated for political reasons such as increased justice and escape (abolition of) from neo-feudal landlord arrangements, the continued economic success of such movements requires a multi-sectoral approach.

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FOOTNOTES

- 1 — Doreen Warriner (1962 and 1969) has used these terms, respectively, to refer merely to redistributing land tenure rights, in contrast to additional programs of improved technology and infrastructure in the rural sector.
- 2 — Even this model is not complete. For instance, an increase in rural incomes may positively affect the birth rate. In addition, if one accepts the hypothesis that in rural areas in LDC's, children are a substitute for old age insurance, then the migration of offspring to urban centers may also increase the rural birth rate, which will in time affect the rural population and future migration. On the other hand, remittances from children may more than offset this effect. These notions have been developed by Askari and Bizien (1976).
- 3 — Dabbagh (1962) claims that in Syria, a one-third reduction in land costs resulted in a trebling of the peasant's income. However, this would mean that the cost of land was more than 80 percent of the gross income, an unusually high figure. On the other hand, Dabbagh's intentions are well-directed; reducing the cost of land may produce an increase in income but hardly of such a simple, inverse nature.
- 4 — They cited a perverse relationship between barley and wheat supply responsiveness found in several studies of India and Pakistan and the fact that vetch is only marginally a market crop in emphasizing the positive shifts in elasticity for the other crops.
- 5 — Baali (1969) and Simmons (1965) reported that Iraq had five cooperative associations with 286 members at the time of the 1958 revolution. By 1964 there were 91 organizations with 8,098 members. At the onset of Ba'th party rule, there were 450 cooperatives with 60 thousand members, but many groups existed mainly on paper. The Ba'th regime placed considerable emphasis in this area, and by 1971 about 840 cooperatives with 135 thousand members were reported.
- 6 — One ought to accept the statistics on the expansion of cooperative activities with some caution. Many cooperatives may be on paper alone, so that the number of effectively operating cooperatives is slightly less than reported. Actual operations may be anywhere from the publication of government decrees to partial formation to completed associations.

- 7— Iraq has not yet released the detailed results of its 1976 census, and the 1957 census does not provide comparable urban versus rural categories to allow computation of urban migration rates between the 1957 and 1965 censuses.
- 8— That is not to say that many other factors besides land reform have not affected recent migration patterns in the Middle East. For example, war has displaced thousands of Egyptians from the Suez Canal region, the Quneitra region in Syria, and from northern Iraq. Compulsory military service takes many young peasants from the farm and often leaves them reluctant to return after discharge. Extensive microanalysis would be required for a definite identification of the extent of the role played by land reform in the movement to (or from) the cities.
- 9— This is not to say there has not been considerable discussion of the interaction of land reform and other economic sectors. For example, in the United Nations' fifth report on *Progress in Land Reform* (1970), prepared jointly with the Food and Agriculture Organization and the International Labor Organization, the problem is discussed at length in Chapter V.