

**Arab Republic of Egypt**  
**Institute of National Planning**



**ADVERSE ECONOMIC EFFECTS RESULTING  
FROM ISRAELI AGGRESSIONS AND  
CONTINUED OCCUPATION OF  
EGYPTIAN TERRITORIES**

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## PREFACE

The present study is a result of monumental collaborative efforts of a large number of individuals and agencies. It started in January 1977 at the request of the Ministry of Foreign Affairs. The Institute of National Planning undertook the overall responsibility for the study which aimed at providing a scientific and methodologically viable estimate of the adverse economic effects of the 1967 Israeli aggression and continued occupation of Egyptian territories. I would like to acknowledge the active participation in the study by the Ministries of Foreign Affairs, Planning and Finance as well as a multitude of Agencies and Departments which have shown a sense of dedication and urgency in accomplishing this important national task.

A preliminary report on the study was prepared in August, 1977, and submitted as an official document to the United Nations. It was the basis for the section on Egypt in the Secretary General's report entitled "Permanent sovereignty over national resources in the occupied Arab territories" and presented to the thirty-second session of the General Assembly in October 1977. The General Assembly deliberations resulted in a resolution (A/C.2/32/L.59) acknowledging in principle the right of the Arab countries to compensation for the adverse economic effects they suffered as a result of the Israeli aggression and occupation.

The present report is only a partial evaluation of the losses involved. It is subject to limitations of omittance and underestimation which are explained in the Introduction. It involved a complete revision and updating of the August 1977 preliminary report.

It is with great pleasure that I acknowledge the dedicated efforts of all the individuals - too numerous to list here-without whose diligence and dedication, this work could not have been accomplished in such a relatively short time.

Last but not least, the greater part of the present enterprise was performed under the able scientific supervision of Dr. Ismail-Sabri Abdalla, the former Director of INP.

April 1978

Dr. Kamal El-Ganzoury  
Director. INP.

## INTRODUCTION

## I Terms of Reference

This study was carried out at the Institute of National Planning in collaboration with the Ministry of Foreign Affairs, the Ministry of Planning, the Ministry of Finance, and the Ministry of Economy and Economic cooperation. The objective was to provide a scientific and methodologically viable estimate of the adverse economic effects of the 1967 Israeli aggression and continued occupation of Egyptian territory. The study took almost a year to complete, and required the cooperation of hundreds of individuals from various sectors of the economy in evaluating war losses according to a predetermined uniform methodology. A preliminary draft of the study was available in August 1977. The present final report-while subject to the same limitations in coverage as the preliminary report-makes use of more recent data which was made available since the completion of the preliminary report. In short, This report is still only a partial estimate of the war losses, which needs to be supplemented with data on the losses resulting from Israeli aggressions before 1967 and other losses not accounted for in this report, as explained in the next section.

## II. Methodology and Limitations

To provide accurate estimates of economic losses resulting from Israel's aggressions and occupation, two approaches were followed: a sector-by-sector approach and a macro-economic approach. The two approaches complement and check on each other since the sectoral approach can not adequately measure indirect and longer-term losses, while the macro approach may underestimate direct capital losses. The detailed explanation of the methodology and estimates for the two approaches will be included in the following chapters.

Before moving on to present the estimates of economic loss we would like to point out the following remarks and limitations:

- (a) Special attention was given to ensure that double-counting was strictly eliminated, and transfers were wholly excluded
- (b) Coverage of economic losses is incomplete. Some items-be-cause of non-availability of reliable data-were not included namely:
  - losses resulting from aggressions before 1967.
  - military losses, human and physical.
  - human civilian losses.
  - losses in the still occupied territories.
  - financial rights: domestic & foreign.

- Damage to items of national, religious and cultural heritage such as ancient mosques, churches and monuments.

Other items - due to time limitation and difficulty of calculations - were obviously and substantially underestimated. namely:

- Lost opportunities
- Losses of certain segments in the private sector, particularly those of retail trade, crafts and other agricultural and industrial activities in the traditional sector.

(c) Capital losses are underestimated in both sectoral and macro estimates. This is due to the fact that these estimates reflect unrealized incomes that would have been generated by the destroyed assets over their life time, and definitely the life time of some of these assets would have extended beyond 1983, the last year in our calculations. We chose to adopt a conservative assumption that the war and occupation effects will disappear in 1983 even though it can be reasonably argued that they extend beyond that date.



Naturally, Egypt reaffirms and reserves its right for full compensation of those losses that were excluded or underestimated, whenever correction for these defects can be made, and also of the losses resulting from previous aggressions prior to 1967. It also reserves its right to readjust the amount of compensation, to take into account the increase in prices between 1977 (in which prices the present estimates have been calculated) and the time when its claims will be finally satisfied.

### III. Summary of the Findings

According to the sectoral approach, our evaluation of the economic losses caused by Israeli repeated aggressions and continued occupation of Egyptian territories since June 1967 - subject to the reservations of omission and underestimation explained in the previous sector - is L.E. 21.581 billions at 1977 prices, assuming that the adverse economic effects of the war and occupation disappear at the end of 1983.

The macro-economic modeling approach gave three alternative estimates based on three different models. The estimates ranged from L.E. 29.424 to 30.426 billions. We believe that the macro estimates-while still conservative for reasons discussed in the body of the report-provide a more comprehensive view of the war losses.

In conclusion, the war losses may be no less than L.E. 29.5 billions and may indeed well exceed L.E. 30 billions in 1977 prices. Both sectoral and macro estimates assume that the economic effects of the war and occupation end at the year 1983. The choice of this year - while somewhat arbitrary - results in conservative estimates of war losses. The results of the damage to the productive capacity of the economy caused by the 1967 aggression, continued occupation, and war - like conditions are expected to continue well beyond 1983.

**1. LEGAL TERMS OF REFERENCE**

I. Legal Basis for Reparation:

1. A state, as an international person, bears the responsibility ensuing from the violation of its obligations.
2. The breach of an international obligation constitutes an international delinquency, and the injured state becomes legally entitled to demand compliance with international obligations.
3. An international delinquency is any injury to another state, in violation of an international legal obligation. It ranges from ordinary breaches of treaty obligations to violations of international law, amounting to a criminal act.
4. The principal legal consequences of an international delinquency is reparation of the moral and material wrong done. It is a principle of international law that the breach of an international duty, involves an obligation to make reparation, in an adequate form.
5. It is relevant to indicate that the concept of reparation in internal and international law are not the same. In internal law, reparation is due when there is a breach of an existing legal rule or a contractual legitimate obligation; here (Fault) is "ipso facto" presumed, while in case of torts (Fault) must be accompanied by negligence to provide legal basis for reparation.

In International Law, it is usually difficult to prove either negligence or the absence of due diligence vis-a-vis the state. Therefore, it is sufficient to consider that fault exists when an international obligation, be it customary or contractual, is violated, provided that causality had to be proved.

6. International torts may be divided into two categories, moral and material. The former are those which affect the dignity of the state and thereby impair the harmony of international relations. The latter are those which occasion loss of public and private property, or suffering and inconvenience to individuals.
7. The moral international torts provide for apology to the injured state, while material international wrongs are compensated for in the following forms:

(a) Restitution:

The Permanent Court of International Justice laid down in the Chorzow factory case (1927) the rule that a wrong to an alien property holder should be remedied by a "restitution in kind".

(b) Reparation:

When restitution is not possible, the quantum of damages must be calculated so as to put the claimant in an identical financial position.

The essential principle contained in the actual notion of an illegal act is that reparation must, as far as

possible, wipe out all the consequences of the illegal act, and reestablish the situation which would, in all probability, have existed if that act had not been committed.

- (9) The jurisprudence of the international courts rests on the principle that where the state has performed a wrongful action, it must directly remedy it, and incurs responsibility for failure to do so. This responsibility is met by repairing the damage by way of reparation.

## II. The Legal Basis of Egypt's Claims:

1. Israel Committed a set of wrongful actions, in violation of international obligations, causing moral as well as severe material damages to Egypt.
2. Thus Israel's Responsibility for those wrongful actions emanates from the breach of international obligations, which are contained in various international treaties.
3. Those international obligations could be categorised, according to the type of rules of international law which have been violated, in the following categories:
  - (a) Rules concerning the non-use of force against the territorial integrity or political independence of any state. These rules are essentially:

- i ) The U.N. Charter.
  - ii ) The U.N. General Assembly declaration on the principles of international law concerning the friendly relations and cooperation among states according to the U.N. Charter (1970).
  - iii) The U.N. General Assembly Resolution No. 3314 on Definition of Aggression, "Aggression gives rise to international responsibility".
  - iv) The U.N. General Assembly Resolution No. 3281 (XXIX) of 12 December 1974, containing the charter of Economic Rights and Duties of States.
  - v ) The UN resolutions on "Permanent sovereignty over national resources in the occupied Arab territories" including General Assembly resolutions 3336(XXIX) and 32/161.
  - vi ) The U.N. resolutions on the Arab-Israeli conflict, particularly Security Council Resolution No. 242 of 1967.
- (b) Rules of International law constituting the law of war, which are embodied in the Hague conventions of 1899 and 1907 and in the 4th Geneva Convention on the Protection of Civilians at the time of war.
- i ) In this connection it might be worthwhile citing the famous judgement which the Nuremburg Military

Tribunal rendered in 1946, and which considered the rules contained in the Hague Conventions, as "Declaratory" to existing international customary rules, and not establishing new rules that could be contested on the basis of non-adherence to those conventions.

Israel is therefore bound by these rules, both during military operations, and during its occupation of the Arab territories.

The most important stipulation in this connection is contained in art. 3 of the Hague convention (IV) on Respecting The Laws and Customs of war on Land, "A belligerent party which violates the provisions of the said regulations shall, if the cases demands, be liable to pay compensation. It shall be responsible for all acts committed by persons froming part of its armed forces".

ii)0 Israel is party to the 4th Geneva Convention concerning the protection of civilians at time of war, and therefore bound by its rules. The rules contained in this convention indicate that certain international obligations have been violated, when Israel, not only failed to provide for protection against coercive actions but also committed wrongful



actions constituting grave violations against the civilians in the occupied Arab territories.

- iii) As for the legal basis for the responsibility of Israel for damages resulting from military operations executed in the depth of the Egyptian territory, it is relevant to recall that this principle is universally recognized and amply stressed in several pronouncements by the international community such as:
- The League of Nations Resolution of the 3<sup>rd</sup> of September 1938 concerning the protection of civilians against shelling in time of war.
  - The Resolution adopted by the 28<sup>th</sup> International Conference of the Red Cross in 1965 relating to the protection against the risks of war.
  - Resolution no. 23 of the International Conference on Human Rights held in Tehran, on 12 May 1968, concerning human rights during armed conflict.
  - U.N. General Assembly resolution no, 2244 (XXIII) of 19 Dec. 1968, concerning the respect of human rights during armed conflict.
  - U.N. General Assembly Resolution no. 2675 (XXV) of 9 Dec. 1970 concerning the basic principles of the protection of civilian inhabitants during armed conflict.

It is important to reiterate in this connexion that all these resolutions are of a declaratory character. They didn't create new international rules, they only declare their existence and acceptance by the international community.

- C) Rules of international law constituting the law of military occupation, which regulates property rights in the occupied territories.

The sources of this law are diverse, but the Hague conventions of 1899 and 1907, as well as the 4th Geneva Convention, are the main sources. In essence, the law of military occupation has allowed limited activities to the occupying power concerning the administration of public and private property, in such a manner that is necessary for military needs, and without prejudice to the rights of the occupied state or its citizens.

Israel has completely disregarded its obligations under the law of war. Suffice it to refer to its exploitation of the mineral resources of the Sinai and the Gulf of Suez.

This exploitation was systematically carried out, to meet Israel's home civil economic needs in the present as well as for the future, and not only for reasons papp-

pertaining to the exigencies of war as provided for in the relevant rules.

Similar action by Nazi Germany was condemned by the tribunal of Nuremberg in 1946 for having exploited the resources of the European territories in a manner which exhausted these resources and in a quantity exceeding the effective military needs of the occupying power.

Thus, this wrongful action which was committed in violation of international law and which caused material damages to Egypt, necessitates reparation.

II GENERAL OVERVIEW OF THE  
ECONOMY BEFORE AND AFTER THE  
1967 AGGRESSION

This report aims at evaluating in a quantitative form the losses suffered by the Egyptian economy as a result of Israeli repeated aggressions and continued occupation of parts of its territory since 1967. The main findings are included in Chapters III and IV.

This chapter is intended to place those findings which are forcibly partial - in the broader framework of the overall performance of the Egyptian economy before and after 1967. This global assessment would show better how the Israeli aggressions seriously disrupted an ongoing successful social and economic development effort.

Section I shows how since the 1952 revolution multiple efforts and various institutional measures were undertaken in order to revitalize the Egyptian economy and put it on the track of overall systematic development.

Section II shows how the above efforts and institutional measures, in addition to new ones, enabled the country in the sixties to implement a comprehensive planned development program with remarkable achievements.

Section III demonstrates how this ascending development curve has been brutally bent down as a consequence of Israeli repeated aggressions and continued occupation of Egyptian territories.

I. Development Becomes A Top National Priority:  
Setting The Stage (1952-1959).

The new revolutionary government that came into power in 1952 committed itself from the very beginning to economic development and raising the standard of living. It was faced with a stagnant economy. Bent Hansen calculated the annual rate of growth of the Egyptian economy for the period 1913-55 at 1.7%. This low rate of growth coupled with a rising birth rate and a declining death rate resulted in the deterioration in the standard of living and the accompanying phenomena of poverty, disease and illiteracy.

The economy was predominantly agricultural, with negligible mineral and oil resources, and a weak industrial sector concentrated mainly in textiles. One of the consequences of this situation was the dominance of Egyptian exports by one product, namely raw cotton (85% of total exports in 1950).

Unlike its predecessors, the new government insisted upon waging a frontal attack on this state of underdevelopment. The development effort was aimed at increasing output, diversifying the economy through industrialization, and tackling the most urgent social problems such as education, health, clean water supply...etc.

To achieve the above objectives, it was clear to the new government that some measures of structural and institutional reforms were necessary requisites for releasing national resources and endeavours in the direction of social and economic development. These reforms designed to set the stage for systematic development may be summarized in three categories discussed respectively below; land reform, investment promotion, and institutional transformations aimed at enabling the government to play an effective role in the development effort.

#### 1- Land Reform

The extremely lopsided character of land distribution and its associated socio-political set-up in the countryside was both inhibiting development and frustrating peasants. Large absentee landlords appropriated a large part of the economic surplus and directed most of it to conspicuous consumption, land

speculation and other non-productive activities. Consequently, the primary aim of the land Reform Law, promulgated in 1952 few weeks after the revolution, was to direct the investment of the surplus generated in agriculture towards more productive activities, especially industry. A second purpose of the new law was to get rid of the socio-political relationships associated with the semifeudal system prevailing at that time.

The new law set maximum limits for land ownership and accrued rents. The expropriated land was distributed to landless peasants in small plots. A full-scale cooperative system was established to ensure regular supply of inputs, technical, and marketing assistance to the new owners.

## 2- Investment Promotion

In 1953, the Permanent Council for the Development of National Production together with its twin Council for the Development of Services were established signifying the early commitment of the government to a concept of total development which included both economic and social aspects.

The first Council operated largely on a project-by-project basis. Its major tasks were project identification, feasibility studies, securing necessary finance, and project implementation.



As the council progressed in its activities, it became apparent that the project approach was not adequate. Consequently, it started to draw some sectoral development programs.

In addition to its direct involvement in project identification and implementation, the government endeavoured to promote both local, and foreign private investment. It initiated legislation directed at removing obstacles and providing incentives to private investment. This legislation covered taxes, customs duties, foreign investment promotion, minimum profit guarantees, modernizing the company law, and labor laws.

However, in spite of all these measures of encouragement, response from both local and foreign private capital proved to be poor. Furthermore, available foreign aid was very limited. Consequently, Egypt had to rely on its own resources to finance development. The government had to step in to accumulate and mobilize the necessary financial resources that were not forthcoming from private sources. This has resulted in several measures which transformed the economy's institutional structure. These measures are discussed next.

### 3- The Transformation of the Economic Institutional Structure

As a direct response to the western powers' withdrawal of

their offer to finance the most vital development project at the time, namely the High Dam, the government nationalized the foreign Suez Canal Company in 1956. The Canal revenue proved to be a valuable source for financing development. The British, French, and Israeli aggression that followed pushed the Egyptian government to nationalize French and British companies which controlled such strategic sectors as banking, insurance, and foreign trade. These companies were the founding stones for the emerging public sector.

The institutional manifestation of the government commitment to industrialization was the establishment of the Ministry of Industry in 1956. It was charged with the task of drawing the first five year industrialization program, in addition to supervising several industrial support functions such as vocational training, standardization, and engineering services.

Another innovation instituted in that period (1957) was the establishment of the Economic Development Organization which acted as a holding company supervising the government investments in various economic activities. The organization was designed to perform two functions;

- the promotion and implementation of major projects which were not appealing to private capital because of

their low returns, or long gestation periods

- Providing the government with an instrument of economic intervention to correct any development imbalances.

At about the same time, the National Planning Commission which replaced the Council for the Development of National production came to existence signifying a shift from the project or program approach towards comprehensive economic and social planning. In the meantime the agreement to build the High Dam was concluded. This project was to be the pivot for all agricultural development, in addition to its use as a major source of energy.

On the whole, the annual rate of growth in the period under study in this section (1952-59) was about 4%. Although this rate was substantially higher than the rates of previous periods, the government's desire to achieve still higher rates resulted in the introduction of a system of planning for economic and social development. The performance of the Egyptian economy in the planning era (1959/60-1966/67) - prior to the 1967 aggression is reviewed in the next section.

II. Economic Performance in the  
Planning Era Prior to the 1967  
Aggression (1959/60-1966/67)

In July 1959, the first five year plan (1959/60-1964/65) was launched. The main national goal was to double national income in ten years. To this end, the first five year plan was aimed at achieving 40% increase in national income (an annual rate of growth of 7%). While keeping in mind this fundamental objective, the following principles guided the planning body in drawing up the plan:-

- 1- To maximize the use of potentialities in both vertical and horizontal expansion in agriculture.
- 2- To create a solid industrial base capable of consolidation and facilitating the process of future economic development in the country.
- 3- To expand job opportunities in order to absorb the increase in manpower resulting from population growth during the plan period.
- 4- To widen the scope of activities of the public sector.
- 5- To complete the implementation of projects already started, and also to exploit idle productive capacities.
- 6- To raise the per capita level of consumption within reasonable limits and thus allowing for an increase in

saving rates.

- 7- The use of all available sources of foreign finance while taking into account the resulting increase in foreign debt servicing burdens.
- 8- To expand within reasonable limits, the essential social services which are offered free of charge or at nominal cost.
- 9- To redistribute the national income in favor of low-income groups.

The implementation of the plan was faced with various difficulties of a natural, and economic character. The greatest natural difficulty was the sharp decline in the main export product namely cotton, in 1961. On the economic side, the plan was faced with a serious shortage of finance. When the plan was drawn, it was envisaged that private capital would finance 40% of the required investment. Due to institutional factors related to the attitude of local capital, and other external factors related to the attitude of foreign private capital, it became clear starting from the first year of the plan that the required private capital was not forthcoming. As a result, the government took extensive nationalization measures in the period 1961-64 which enabled it to raise the level of total investment from L.E. 225.6 millions in 1960/61 to L.E. 372.4 millions in 1963/64.

In spite of the natural and economic difficulties outlined above, the performance of the Egyptian Economy during the period under study (1959/60 - 1966/67) was quite remarkable by Third World standards. To review this performance, we discuss first the volume and structure of investment; second, we discuss the resulting change in the volume and structure of GDP; finally, we deal with the balance of trade situation.

#### I- Investment

A remarkable effort had been made in the field of investment. Total realized investment during the period (1959/60 - 1966/67) reached approximately L.E. 2,263.5 million averaging 17% of GDP, a percentage never attained before. A great part of this investment was directed to large projects which - by their very nature - do not give immediate returns. Typical examples of these projects are the High Dam, Land reclamation, electrification projects, and the Iron and Steel Complex.

Furthermore, the emphasis in investment allocation was placed upon the primary and secondary rather than the tertiary sectors. 38% of total investments went into industry and electricity. If we include the High Dam, agriculture obtained 22.9% of investments.

2- Gross Domestic Product

GDP increased at an annual rate of 5.9% in real terms indicating relatively efficient planning and economic management. More importantly, the structure of GDP has changed reflecting an increase in the relative importance of industry at the expense of agricultural and tertiary sectors. The share of industry in GDP increased from 24.4% in 1959/60 to 28.2% in 1966/67.

3- The Balance of Trade Deficit

This deficit was due to the failure of the exports to grow fast enough to compensate for the accelerating increase in imports. To start with, it should be recognized that the balance of trade deficit is a structural problem of most developing countries as a consequence of the development effort itself. Typically, the increase in imports during the period was due to the expansion in capital and intermediate goods imports, in addition to the increase in the foodstuffs imports to meet the needs of a rapidly increasing population, part of which was previously living below bare subsistence levels.

On export side, it was encouraging that the relative importance of industrial exports increased at the expense of agricultural exports. However, like most developing countries, Egypt faced difficulties in opening and expanding industrial export markets.

Fortunately, the negative effects of the balance of trade deficit on the balance of payments was ameliorated by the surplus

the invisible current component of the latter balance (mainly due to receipts from the Suez Canal, and tourism).

Review of economic performance in the first five-year plan led the government decision-makers and planners to conclude that the attainment of a higher rate of growth required a movement in two directions which were included in the seven-year plan prepared at the end of 1965. The two directions were;

First: Acceleration of growth in the agricultural sector. Such acceleration was all the more feasible at that time due to completion of the first phase of the High Dam, and the availability of land already reclaimed and other land under reclamation.

Second: The development of capital and intermediate goods industries with a view towards strengthening the inter-industry relationships. Among the factors which made this objective feasible were the discovery of non-negligible oil resources the expected completion of the High Dam electrification projects during the following few years, the availability of trained manpower thanks to the expansion in education and vocational training in the previous period, and the success in adjusting the rate of increase in final consumption.



In conclusion, the seven years preceding the 1967 aggression exhibited a high degree of economic performance which was oriented towards establishing solid economic basis in the primary and secondary sectors for further economic development. Furthermore, the government was closely following up this performance, identifying major problems and imbalances, and taking corrective measures in order to achieve a higher sustained rate of growth. The 1967 aggression dealt a serious blow to the country's economic prospects and subjected its economy to various distortions and imbalances, which will be the subject of the next section.

### III. Impact of Aggression on the Performance of the Egyptian Economy

On June 5, 1967, the Israeli aggression under consideration took place. The economy, was completely transformed into a war economy. The bulk of economic resources were allocated to satisfy defence requirements. Individual consumption was limited to the basic necessities. Construction for civilian purposes was brought to a near-complete halt, exports dropped and the rate of capital formation was reduced.

This situation, which was a direct result of the Israeli aggression and which lead to a very slow rate of growth of GDP,

continued for two years. In fact, this rate becomes even negative in 1967/68 if GDP is computed at constant prices.\* However, since 1968/69 the rate of growth of GDP started to rise again. A number of factors accounted for this more apparent than real high rate of growth:

1. Due to favourable weather conditions, agriculture registered near-record crops for three consecutive years.
2. A new oil field discovered in the Gulf of Suez nearly compensated for the drop in production caused by the loss of oil fields in Sinai.
3. A number of projects, the construction of which had started before the Israeli aggression, were completed and started production. Some of these were very important projects such as the High Dam, the earlier phases of the Iron and steel complex, etc.

A deeper look, that goes beyond this rate of growth, reveals that it conceals numerous problems that resulted from Israeli aggressions, continuing occupation of Egyptian soil, and the resulting war-like conditions. Foremost among those problems are the following:

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\* See table I in Chapter IV P. 71.

1- Increasing foreign indebtedness

The apparently high rates of growth of GDP in the late sixties and in the seventies, aside from their being mostly monetary rather than real, have been realized at the high cost of a staggering increase in Egypt's external indebtedness. The following table shows the accelerating deficit in Egypt's current transactions with the outside world since the 1967 aggression and the percent it constituted of Egypt's total investment.

<u>Year</u>	<u>1966/7</u>	<u>1967/8</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>76</u>	<u>77</u>	*
Deficit in								
Current transac- tions(LE million)	57	120	223	533	969	593	490	
% of Total Invest- ment	14.8	35.1	44.4	73.0	73.0	42.2	28.6	

As previously pointed out, just before the Israeli aggression, Egypt was practically reaching its "take-off" phase of development and getting ready to go into the "self-sustained growth" phase. Had the aggression not hindered Egypt march along the path of development, Egypt could have easily

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\* tentative.

attained the actually realized rates of growth of GDP using its own domestic resources with no need for such great dependence upon foreign financing, as may be evidenced by the high and rising rates of investment actually reached in the early sixties (13% of GDP in 1961 rising to 18% in 1966). What makes it worse, is that all this expansion in indebtedness took place at a time when international financial liquidity was suffering one of its worst crises, and the cost of international lending was skyrocketing.

2- Deterioration of Capital Assets

Two dramatic consequences followed from the diversion of a greater portion of the country's resources to defence:

- a) Replacement of assets was considerably disregarded. The resulting deterioration of public utilities and all other forms of infrastructure is a well-known fact. Its negative effect upon economic activities and all aspects of life is being felt by all. Unfortunately, the negative effect of that deterioration will undeniably continue to exist for some time. Negligence of replacement was also imposed upon industry and other productive sectors. The spectacular example here was the textile industry, the largest and most important industry in Egypt. Plans for

the complete rehabilitation of textile factories are now being undertaken in cooperation with IBRD at tremendous costs. Lack of maintenance and replacement in the case of the Kima factory, the biggest plant for the manufacture of fertilizers in Egypt, led to its temporary stoppage for complete overhauling, and thus adversely affected the availability of fertilizers locally.

- b) The implementation of many planned projects was either postponed or stretched in time. Examples of these are so numerous that mentioning a few will suffice to demonstrate the case. Plans for land reclamation and cultivation were both delayed and extended over longer periods. Most of the complementary projects related to the High Dam were postponed. Special mention should be made of the drainage scheme, a necessary corollary to expanded regular irrigation, which suffered important delays resulting in a decline of land productivity and increase of salinity. Another example is the non-implementation of electrochemical plants producing inter-alia more fertilizers. Egypt, according to pre-aggression plans, was to become a net exporter of fertilizers in the early seventies. Due to postponements and delays in the establishment of the new fertilizers plants, in addition to the temporary stoppage of

Kima, to which reference has already been made, Egypt is still a net importer of fertilizers, and will continue to be, at least till the end of the seventies.

Postponement of the implementation of the above-mentioned projects had definitely contributed to the acuteness of the food shortage Egypt had been suffering lately. The decline in the rate of growth of agricultural production, coupled with the increase in consumption, reduced agricultural as well as agro-industrial products available for exportation, while raising the quantity and value of imported foodstuffs. The effect upon Egypt's balance of payments has been drastic and the deficit in its current transactions with the outside world kept rapidly mounting, as was pointed out before.

Postponements of projects in other fields, such as the production of building materials, transportation, communication, etc., naturally had their effects in the creation and augmentation of shortages in various sectors.

### 3- Inflationary Pressures

Because of the continuation of "neither war nor peace" conditions for so long, the Egyptian economy had to combine both war-economy

and growth-economy features simultaneously. Thus, while increasing defence and military expenditures substantially, Egypt had to continue its developmental efforts, maintain and increase the rates of its investment and consumption. This expansion in expenditures placed heavy inflationary pressures on the economy.

4- Increased immigration

The low rate of growth of the economy right after the Israeli aggression and the near-complete halt of civilian construction till almost the beginning of 1974, together with the rapid development of the neighboring countries, lead to an extremely high rate of temporary or permanent immigration from Egypt, compared with pre-aggression rates. The disproportionately high representation of qualified personnel and skilled workers among the migrants resulted in serious shortages in some types of skilled labor and consequently increased project costs sharply, especially the construction component. Thus, the recent immigration trends since 1967 created serious development bottlenecks and contributed to inflation.

5- Other Socio-Economic disruptions

The repeated Israeli aggressions, continued occupation of land and prolonged war-like conditions have also caused a number of

economic, social and political problems, the costs of which may be hard or even impossible to measure or estimate. Enlisted university graduates kept in the armed forces for so long, in many cases found it difficult to maintain their training and educational levels. Agricultural workers lost their desire to return to farming and looked forward to urban migration, thus confronting Egypt, for the first time in its history, with the possibility of facing agricultural labor shortage in the near future. Temporary disruptions in social relations and deviations in conduct, that seem to be "normal" and tolerable in short times of war, become extremely destructive and completely intolerable when they exist for long periods of time, as they did during the prolonged war-like conditions that followed the Israeli aggression in 1967. Their negative effect upon the individual and his values is immeasurable. This problem of social destabilization and its serious effects has been particularly acute in the case of the population of the Suez Canal area who had to be evacuated from the area and relocated in other parts of the country. This population amounted at the time of evacuation to about 1.1 million persons.

The rehabilitation of the Egyptian economy, freeing it from the obstacles caused by the Israeli aggression and the re-establishment of its potentialities will not be an easy job. On the contrary it will be difficult, tiresome and very costly. The cost of re-



construction of war devastated canal zone only is staggering.

Restoration and modernization of the infrastructure have been recognized to be so vital that close to 40% of total investment in national plans in recent years has been allotted to them.

Oil fields in Sinai will have to be restored to "normal" production, and all destructive operations, including over-production have to be eliminated. In fact, for security reasons and to avoid other Israeli aggressions similar to those that took place in the past, Sinai will have to be developed and inhabited, regardless of the high costs this may impose upon the Egyptian economy at the present time, and regardless of what it may do to previously set developmental priorities. Repayment of military debts will also lay heavy burdens upon the Egyptian economy.

Finally, mention has to be made of human losses. These could never be measured in monetary terms, and no attempt at such measurement is made in this report. However, a very minimal approximation of the impact of these losses on the national economy could be made by calculating the "replacement costs" for those lost individuals, i.e. the cost involved in rearing, educating, and training the same number of individuals, with similar qualifications and skills.

III. SECTORAL EVALUATION  
OF WAR LOSSES

I. Concepts and Principles Underlying the  
Evaluation of the Economic Losses Caused by Israel's  
Aggression and Continued Occupation

A survey was conducted in most sectors of the economy in order to evaluate the war losses. A standard set of definitions and instructions was prepared according to which data was collected. For reasons of simplicity and data comparability, all agencies contacted were asked to evaluate the losses since June 1 and until December, 31, 1975, mostly in 1975 prices. In our analysis and conclusions, we traced the effects of the war and occupation until the year 1983, in 1977 prices. Data was collected on three major types of losses:

- First : Capital Losses
- Second : Losses in Income
- Third : Lost Opportunities

Following are the concepts and principles underlying the evaluations carried out in the above mentioned areas.

First - Capital Losses

Capital losses are divided into direct and indirect losses

A. Direct Capital Losses

These are divided further into losses in fixed assets and

losses in stocks. Both types are explained respectively below.

1- Losses in fixed assets:

These are the total or partial losses in the real value of fixed assets as a result of destruction, damage, non-use, lack of maintenance, and/or economic and technical overloading due to aggression.

These losses may be gauged depending on the circumstances in one of the following manners;

- With regard to the assets which have been totally destroyed, lost or damaged: The replacement value in the actual prices of replacement, or according to the 1975 prices in case replacement has so far not been affected.
- With regard to the assets which have been partly destroyed or damaged and which have been repaired or are reparable: The cost of capital repair (major overhauling) required by the renovation of assets to restore their efficiency, valued at actual prices or the price of 1975

The loss of fixed assets is recorded in terms of the following items while abiding by the concepts of the standardized accounting system:

- Land (according to the extent of deterioration, and the destruction of embodied resources such as trees..)
- Buildings, utilities and roads (including installations used in oilfields, waterways, airports etc...)
- Machines and equipment,
- Means of transportation,
- Tools and instruments.
- Furniture, office equipments and stationery.
- Livestock and Fish.
- Intangible assets.
- Other fixed assets (which basically include assets the market value of which is much higher than their cost because of their archaeological or artistic importance such as historical manuscripts, pieces of antiquities, works of art etc,...)

2- Losses in Stocks:

These constitute the loss or damage in stocks valued at prevailing international prices at the time of loss and which include:

- Intermediate goods, such as raw materials, fuel, spare parts, equipment, packaging materials etc.
- Unfinished products and works in process (which in agriculture includes unharvested crops).
  - Finished products.

B- Indirect Capital Losses:

These are the capital costs resulting from:

1. The transfer of production units and services from the areas subject to aggression and their resettlement elsewhere.
2. The evacuation of citizens from the areas of aggression.
3. Civil defense and insuring safety of installations.  
These are calculated on the basis of real costs (including an estimation of self-aid efforts) at the prices prevailing at the time of expenditure.
4. Delays in the execution of investment projects because of aggression. These are defined as the difference between the calculated costs of the project according to the prices of the planned year of execution on the one hand, and the actual cost of execution or the calculated cost based on 1975 prices, if execution has not been affected yet, on the other hand.

Second - Income Losses

The losses in income during the years of aggression include the following:-

- A- Unrealized incomes.
- B- Burdens resulting from increased cost.

A- Unrealized Incomes:

These constitute the drop in income (gross product or value added at factor cost) as a result of the stoppage of activity, loss or idleness of productive capacities.

The method of evaluating lost income (under this concept) differs according to the losing units and is done in the following manner:-

1- In Production Units:

These are organized business units owned by public, private, or cooperative sectors. In these units lost incomes were evaluated in the following manner:

- Estimation of the production which would have been realized during the years of aggression, on the basis of the average value of gross production at market

prices during a period of three years prior to aggression multiplied by the normal rate of growth (without the execution of any new investment projects) which was expected during the period of aggression.

- We deduct from the above value of potential production the value of intermediate consumption, indirect taxes and duties, estimated on the basis of the average actual expenditure during the period of three years prior to aggression while taking into consideration the effect of production growth on them.

2- In the State Administrative Units:

Such income losses are estimated by:

- Total salaries of employees laid off by units the activities of which have been affected by aggression and which would have been paid to them had they been kept on during the period of its perpetuation.
- or by the drop in service fees, where such fees were charged.

3- In the unorganized private sector:

This sector includes professionals, craftsmen, merc



and small workshops and the like. Their unrealized income is estimated with the assistance of the data available in the Ministry of Social Affairs. Chambers of Commerce, Ministry of Industry and other sources.

B. Burdens Resulting From Increased Cost:

These include:

1. Increases in the cost of production as a result of imposed reliance on substitute local or imported requirements at higher costs.
2. Increases in freight, insurance and transport costs, particularly those resulting from deviations in maritime, air or land routes.
3. Increases in burdens of finance.

Third, Lost Opportunities

These include the following:

1. Unrealized income resulting from the stoppage or delay in the completion of investment projects in the fields of commodity and service production.

2. Unrealized income due to unrealized investment of potential savings (self-financing) which would have been generated in production units.

These incomes are estimated according to the concept of the gross value added at factor cost, by estimating the production unrealized during the years of aggression minus the value of commodity and services inputs according to the prevailing rates, all at current prices.

The following tables indicate the evaluations based on the above concepts and principles. For some sectors, namely: Petroleum, Construction, Suez Canal, Agriculture and Irrigation, and Tourism, there were some unique problems of measurement. The detailed methods used in these sectors are included in appendix 3.1.

## II. Aggregate Sectoral Tables

Table I gives a summary of the total war losses until the end of 1975, calculated according to the sector-by-sector method outlined in the previous section. The figures in this table are simple aggregates of sectoral losses at different prices. Tables 2 through 10 provide loss figures for each of the following sectors respectively:

- 1) Agriculture, irrigation, and drainage,
- 2) Mining and quarrying,
- 3) Manufacturing,
- 4) Electricity, gas, water, and sanitary,
- 5) Construction,
- 6) Commerce,
- 7) Transport, storage and communications,
- 8) Financial institutions and business services, and
- 9) Services.

Table 11 and 12 give the loss evaluation for the Suez Canal Authority and the Petroleum sector respectively. Although the losses in the two latter sectors were included in the relevant sectoral tables (2-10) according to the type of economic activity involved

seperate accounts of each sector are included in tables 11 and 12 because of their special significance.

A further breakdown of the sectoral tables included in this section is given in appendix 3.2.

ECONOMIC LOSSES

Caused by Israel's Aggressions and Continued Occupation During the Period from June 5, 1967 to Dec. 31, 1975

Table No. 1

Thousands of L.E.

ISIC	E.C.N.	Sub-Sector	Capital Losses			Losses in Income	Lost Opportunities
			Direct	Indirect	Total		
0	1	Agriculture, Irrigation and Drainage.	21749	682203	703952	13301	150165
1	2	Mining & Quarrying	1031165	325516	1356681	41288	23899
2-3	3	Manufacturing	76752	138817	215569	381230	132700
5	4	Electricity, Gas, & Water	104033	159982	264015	133408	27760
4	5	Construction	544741	381275	926016	94244	116271
6, 853	6	Commerce	50081	30755	80836	563048	24182
7	7	Transport Storage & Communication	304882	229768	534650	1396768	121245
62-4, 83	8	Financial Institutions & Business Services.	3933	660	4593	9101	-
8, 522	9	Services.	142262	235857	378119	99238	946
		TOTAL	2279598	2184833	4464431	2731626	597168

Sector: Agriculture, Irrigation and Drainage.  
 Egyptian Code No 1  
 Int'l Stand, Ind. Classif.0

ECONOMIC LOSSES  
 Caused by Israel's Aggressions and Continued  
 Occupation During the Period from June 5, 1967 to  
 Dec. 31, 1975

Table No. 2

Thousands of L.E.

ISIC	E.C.N.	Sub-Sector	Capital Losses		Losses in Income	Lost Opportunities	
			Direct	Indirect			Total
011	11	Agr. and Livestock Prod.	11934	452238	464172	11545	150165
012	1122	Agr. Services	9815	229965	239780	1756	-
TOTAL			21749	682203	703952	13301	150165

ECONOMIC LOSSES

Caused by Israel's Aggressions and Continued Occupation During the Period from June 5, 1967 to Dec. 31, 1975

Sector: Mining & Quarrying  
 Egyptian Code No: 2  
 Int'l Stand. Ind. Classif.: 1

Table No. 3

Thousands of L.E.

ISIC	E.C.N.	Sub-Sector	Capital Losses		Losses in Income	Lost Opportunities
			Direct	Indirect		
13	22	Crude Petroleum & Natural Gas.	943961	259	944220	23899
11,12 14,19	23-9	Metallic & Non-Met. Mining & Quarrying	87204	325257	412461	-
TOTAL			1031165	325516	1356681	23899

ECONOMIC LOSSES

Sector: Manufacturing  
 Egyptian Code No.: 3  
 Int'l Stand. Ind. Classif. 2-3

Caused by Israel's Aggressions and Continued  
 Occupation During the Period from June 5, 1967 to  
 Dec. 31, 1975

Table No. 4

Thousands of L.E.

ISIC	E.C.N.	Sub-Sector	Capital Losses			Losses in Income	Lost Opportunities
			Direct	Indirect	Total		
20	311	Food Manuf. Indust.	1157	3179	4336	37354	5506
205	3116	Manuf. of Grain Mill Prod.	172	1922	2094	343	1748
209	3120	Manuf. of Miscellaneous Food Preparations	-	1300	1300	360	1416
23	321	Spinning and Weaving	1006	12965	13971	16900	8391
231	3216	Cotton Ginning and Pressing	-	213	213	515	24
31	35	Manuf. of chemicals and chemical products.	15351	21275	36626	30739	60659
319	3522	Manuf. of miscell. chemical products.	95	8524	8619	39730	13613
321	353	Petroleum Refineries	47464	29071	76535	107364	23344
33	36	Manuf. of non-metallic mineral products.	2616	20820	23436	25951	2431
34	37	Basic metal Industries	2391	24147	26538	102510	11570
36	382	Manuf. of Machinery except Electrical Mach.	-	-	-	987	-
381	3841	Ship Building & Repairing	4978	6292	11270	8225	3998
386	3845	Manuf. of Aircraft.	1522	9109	10631	10252	-
		TOTAL	76752	138817	215569	381230	132700



Sector: Electricity, Gas Water and Sanitary Services  
 Caused by Israel's Aggressions and Continued Occupation During the period from June 5, 1967 to Dec. 31, 1975  
 Egyptian Code No: 4  
 Int'l Stand. Ind. Classif. 5

Table No. 5

Thousands of L.E.

ISIC	E.C.N.	Sub-Sector	Capital Losses		Losses in Income	Lost Opportunities
			Direct	Indirect		
511	4101	Electric Light and Power	71121	29261	100382	131117
521	42	Water Supply	32912	130721	163633	2291
						-
						27760

1040331 159882 267015

ECONOMIC LOSSES  
 Caused by Israel's Aggressions and Continued  
 Occupation During the Period from June 5, 1967 to  
 Dec. 31, 1975.

Table No. 6

Thousands of L.E.

ISIC	E.C.N.	Sub-Sector	Capital Losses			Losses in Income	Lost Opportuni- ties
			Direct	Indirect	Total		
40	51	General Construction	518101	381164	899265	86630	115485
400	511	Constr. of Buildings	10323	-	10323	7324	-
400	5122	Other Non-Buildings Constr.	16317	111	16428	290	786

ECONOMIC LOSSES  
 Caused by Israel's Aggressions and Continued  
 Occupation During the Period from June 5, 1967 to  
 Dec. 31, 1975

Sector: Commerce  
 Egyptian Code No.: 6  
 Int'l Stand. Ind. Classif.: 6

Table No. 7

Thousands of L.E.

ISIC	E.C.N.	Sub-Sector	Capital Losses			Losses in Income	Lost Opportuni- ties
			Direct	Indirect	Total		
611	61	Wholesale Trade	340	1054	1394	35826	-
612	62	Retail Trade	44476	28998	73474	208622	24182
853	632	Tourism	5265	703	5968	318600	-

ECONOMIC LOSSES

Caused by Israel's Aggressions and Continued Occupation During the Period from June 5, 1967 to Dec. 31, 1975

ector: Transport, Storage & Communication

gyptian Code No.: 7

nt'l Stand. Ind. Classif.: 7

Table No. 8

Thousands of L.E.

ISIC	E.C.N.	Sub-Sector	Capital Losses			Losses in Income	Lost Opportunities
			Direct	Indirect	Total		
711-4	711	Land Transport	600	-	600	-	-
711-4	7111-4	Railway, City, road, Transport	79118	9312	88430	38888	-
719	7115	Pipeline Transport	2967	24	2991	4286	-
715	7121	Sea Transport*	167605	129248	296853	1175043	117319
716	7122	Inland-water transport	52	336	388	300	-
718	7123	Services Incidental to Water transport.	22284	8060	30344	64046	212
717	7131	Air, Transport	6	151	157	99420	-
718	7132	Services Incidental to Air Transport.	21313	5263	26576	4035	167
720	7192	Storage & Warehousing	427	81	508	3947	21
730	7201-2	Wire. & Wireless Telephone & Telegraph Services.	10000	77141	87141	5155	3500
730	7203	Postal Services.	510	152	662	1648	26
			201000	220720	521650	1306760	121245



ECONOMIC LOSSES

Sector: Services  
 Egyptian Code No.: 9  
 Int'l Stand, Ind. Classif. 8  
 Caused by Israel's Aggressions and Continued Occupation During the Period from June 5, 1967 to Dec. 31, 1975

Table No. 10

Thousands of L.E.

ISIC	E.C.N.	Sub-Sector	Capital Losses			Losses in Income	Lost Opportunities
			Direct	Indirect	Total		
810	9105	Gov't Services (Police)	4919	37255	42174	3496	35
810	9109	" (Def. & Adm.)	28295	21670	49965	13228	-
522	9203	Sanitary Services	49000	79422	128422	-	-
821	931	Education Serv.	26663	83048	109711	6694	71
822	933	Medical & Other Health Serv.	26986	9732	36718	71197	840
824	9391	Religious Organizations	5148	83	5231	714	-
842	9413	Radio & Television Broadcasting	546	4252	4798	3909	-
827	9420	Libraries, Museums & Botanical, Zoological Gardens.	705	395	1100	-	-

ECONOMIC LOSSES  
 Caused by Israel's Aggressions and Continued Occupation During the Period from June 5, 1967 to Dec. 31, 1975

Sector: Suez Canal Authority  
 Egyptian Code No.:  
 Int'l Stand. Ind. Classif.:

Table No. 10

Thousands of L.E.

ISIC	E.C.N.	Sub-Sector	Capital Losses			Losses in Income	Lost Opportunities
			Direct	Indirect	Total		
381	3841	Ship Building and Repairing	4978	4790	9768	7855	3470
715	7121	Sea Transport	133080	119540	252620	1107440	115022
718	7123	Services Incidental to Water Transport.	735	764	1499	9827	127

ECONOMIC LOSSES  
 Caused by Israel's Aggressions and Continued  
 Occupation During the Period from June 5, 1967 to  
 Dec. 31, 1975

Sector: Petroleum Sector  
 Egyptian Code No.:  
 Int'l Stand. Ind. Classif.:

Table No. 12

Thousands of L.E.

ISIC	E.C.N.	Sub-Sector	Capital Losses			Losses in Income	Lost Opportuni- ties	
			Direct	Indirect	Total			
13	22	Production	943961	259	944220	9275	23899	
321	353	Refining	47464	29071	76535	107364	23344	
612	62	Distribution	14227	9567	23794	90375	3955	
719	7115	Transport	2967	24	2991	4286	-	
					38921	1047540	211300	51198



### III. Evaluation of the Total War Losses

The application of the concepts and principles explained in the first section of this chapter led to the following values for the four types of losses covered by the sectoral approach:

Income Losses	L.E. 2,732	million
<u>Non-income losses</u>		
Direct capital losses	L.E. 2,280	"
Indirect capital losses	L.E. 2,185	"
Lost opportunities	L.E. 597	"

To reach a single total estimate of the war losses by adding the above figures would be misleading for the following reasons:

- 1- It is believed that the income losses are grossly underestimated by the sectors since they take no account of intersectoral relationships and are based on a very short time horizon. Most probably, the calculation of income losses by the sectors concerned ignores the impact of the bottlenecks arising from the capital losses and the resulting decline in productivity.
- 2- Most importantly, the four loss items given above are of inherently different natures. For example the main impact of the one time destruction of capital assets is not expressed by the value of the

assets, but by the expected income flows which would have been generated by these assets. Thus, in the following section we attempt to translate the non-income elements of the sectoral losses into income losses, taking into account the impact of the decline in capital accumulation and the resulting bottlenecks in the structure of the economy, but not the impact of the resulting decline in productivity, as this is difficult to estimate. The income losses as reported by the sectors were ignored in order to avoid any double - counting. Thus our estimate of the total war losses is based on converting the following three types of non-income losses into income losses:

- a) Direct capital losses,
- b) Indirect capital losses,
- c) Lost opportunities. The results are shown in table 13.

The direct capital losses have led to reduced productive capacity and hence a decline in the value added generated in the different sectors. Assuming that the income - effects of this type of capital losses extend until the year 1983, and using simple sectoral production functions of the Harrod - Domar type, together with appropriate ( indeed generous ) rates of capital depreciation by sector, it was possible to calculate the

resulting income losses up to the year 1983\* In fact, the calculations for which results are given in table(13) have shown that it would not have been unreasonable to assume that the effects of capital losses on income extend till the year 1988. In that year the depreciated capital losses do not vanish completely, but they do reach a magnitude that can be safely ignored.

As regards the other two elements of non-income losses(indirect capital losses and lost opportunities), these were regarded as funds which would have been directed to the financing of investment activities if the 1967 war did not break out. This assumption is based on the fact that the burden of the war was largely born by investment rather than consumption. Those two loss elements were converted into

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\* The incremental capital output ratios used were taken from Ministry of planning. Memo 28/1976, Table 5/14. They are: Agriculture 3.6, industry 4.1 electricity 4.5, construction 8.8 trade 0.4, transportation and communications 8.1, services and finance 0.6, The depreciation rates used are: agriculture 3% industry and mining 5%, electricity 10%, construction 15%, trade 2%, transportation and communications 12%, services and finance 3%. These rates are too high compared with the figures used in recent work by the Ministry of planning. Compare; Essam Montasser, "Egypt's Long-term Growth: 1976-2000". Joint symposium on long-range planning and regional integration with special reference to the Arab Region, INP, Cairo, Jan. 1976. The rates used there are agriculture 1 - 1.5%, industry and mining 2 - 4.5%, electricity 3 - 3.8%, construction 4.5 - 6.5%, trade 1 - 1.5% transport and communications 3- 4%, services 2%.

income losses using a growth expenditure equation\* where GDP is treated as dependent on Cumulative growth expenditure. It was further assumed that had those funds been used to finance investment projects they would have generated income as from the year 1973. In other words, a gestation period of 5 years is assumed. A fairly high depreciation rate(8%) was also used in this calculation.

So far, the income losses calculated from the sectoral loss elements may be regarded as first-order income effects. Further effects on income should also be taken into account, since the forgone income had resulted in reduced saving and investment capacity and hence in reduced incomes. A saving equation calculated from pre-1967 War data was used to calculate the annual reduction in saving up to the year 1983\*\* The forgone savings were then used to calculate the forgone incomes

\*

$GDP = 1404.377 + 0.333 CI$   
Where CI represents cumulated growth expenditure (gross domestic investment plus public expenditure on education and health). The equation was obtained by ordinary least squares based on data for the period 1960-74.

\*\* The savings function used was  $savings = -29.4 + 0.146$  Income, estimated from 1952-1967 data by S.A. Sakr in "Saving and Development Strategy in Egypt", Paper presented to the 2<sup>nd</sup> Conference of Egyptian Economists, Cairo, March 1977.

using the growth expenditure equation referred to earlier. These were regarded as second-order income effects.

The sum of the first and second-order income effect gives an estimate of the total economic losses incurred by Egypt since the 1967 aggression. These turned out to be L.E. 21.581 billion (1977 prices)\*, assuming that the war effects vanish by the year 1983. The figure rises to L.E. 26.857 billion if it is assumed that the adverse effects of the war extend up to 1988.

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\*

Our calculations in table 13 were made in 1975 prices. The estimate was converted into 1977 prices using a rate of price inflation of 25.5% based on World Bank data.

Table (X3) Summary Table for the Calculation of Income Losses on the Basis of Non-Income Sectoral Losses (in Millions, 1975 prices)

	1967	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	1988	
Depreciating Value of Direct Capital Losses	2280	2098	1930	1775	1633	1511	1503	1382	1272	1170	1077	1076	990	911	838	770							
Income Losses resulting from direct capital losses (I)	183	494	530	535	620	695	767	730	694	660	628	597	571	547	523	500	479	460	441	424	407	391	
Depreciated total of lost opportunities and indirect capital losses							2782	2559	2355	2166	1993	1834	1687	1582	1428	1314	1208	1112	1023	941	866	796	
Income Losses due to lost opportunities & indirect capital losses (II)							759	699	643	581	544	501	460	424	390	359	330	303	279	257	236	217	
Total of first order effects (I) + (II)	183	494	530	535	620	695	1526	1429	1337	1251	1172	1098	1038	971	913	889	809	763	729	681	643	608	
Decrease in savings and investment potentialities	27	72	77	78	90	10	22	21	19	18	17	16	15	14	13	12	12	11	10	10	9	9	
Second-order effects (III)	7	25	44	64	87	89	95	100	105	109	114	118	122	125	128	132	135	140	140	142	145	147	
Total Income Losses (Annual) (I) + (II) + (III)	190	519	574	599	707	784	1621	1529	1442	1369	1286	1216	1153	1096	1041	991	944	903	860	823	786	755	

IV. MACRO-ECONOMIC ESTIMATES

OF

WAR LOSSES

## Introduction

In adopting a macro-economic approach to the estimation of the war losses we assume that the ultimate effect of those losses is a lowering of the economy's capacity to grow relative to the growth capacity the economy would have possessed had the war-occupation conditions not taken place. This suggests that the total war losses may be measured in terms of the sum of the differences between the incomes which could have been obtained under "normal" conditions and the incomes which were actually realized under war conditions. In order to operate with this concept, three important problems must be tackled:

- What is the rate of growth that may be regarded as attainable under non-war conditions ?
- Over what period can one legitimately cumulate the income differences ?
- To what extent can one say that the path of the economy in the war period reflects mainly the war effects to the exclusion of any other non-war effects ?

These problems are discussed respectively below.

- a) Choice of growth rates: With regard to the choice of a growth rate (or growth conditions) which may be considered "normal" in the sense of being representative of non-war conditions;



there appears to be no firm basis for a definitive answer. Instead, we shall experiment with a number of alternatives which do not seem unreasonable on prior grounds. They are:

i) assuming that had the 1967 war not taken place, the economy would have followed a path of growth similar to that observed during Egypt's first five-year plan (1960/61-1964/65). This historical trend may need, however, to be adjusted upwards in view of the recent discoveries of oil finds and mineral deposits.

ii) Generating the normal rate of growth, or a rate of growth differential from models of varying degrees of complexity (or simplicity), as will be explained later.

b- Length of period over which losses are cumulated: As regards the question of the length of period over which one may legitimately add up the GDP differences, it is believed that the adverse effects on the economy's capacity to grow are not confined to the period between the out-break of hostilities and the final settlement of the dispute (by the same logic, they cannot be confined to the period 1967-1975). Indeed, the effects extend to a period much longer than that for the following two reasons:

First, the losses arising from the partial or complete destruction of the country's material and human resources cannot be conceived of as a once-and-for-all type of adverse effects. The assets lost would have generated income for as long as they remained usable, i.e. for a period equal to their production life. To take into account only their potential contribution to output during a period shorter than that implies under-estimation of their productive life or their capital value.

Secondly, the income forgone for one reason or another, in a given year would have resulted in increased consumption and investment and hence an enlarged growth capacity in the following years either through the effect on productivity or through the effect on the stock of productive capital and infrastructure. In other words, there are multiplier and accelerator effects which ought to be included in the calculation of the war losses. Theoretically, these effects may extend over a very long period. In practice the lack of sufficient flexibility in the productive system may terminate such effects rather rapidly. Given those considerations, it is felt that a period of 5 to 10 years beyond 1975 ought to be taken into account when calculating the war losses.

c) Problem of isolating the effects of war: It is quite possible that the actual path of the economy and its development in the war period are affected by a variety of factors, not all of which can be ascribed to the war conditions. However, it is no easy task to attempt to separate the effect of war-related factors from other factors on the growth of GDP. Such an attempt may indeed lead "rapidly into a world of total speculation and fantasy", as the UN Secretary General Report\* on this matter had noted. The best one may do in this case is simply to guard against possibilities of underestimating "actual" income and hence overestimating the war losses.

In this connection, it is believed that there were no major non-war related developments which may have taken place and depressed GDP growth since 1967. Any minor non-war related effects may be more than balanced by the possible underestimation of the war losses inherent in almost all the approaches used in this study to calculate those losses.

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Report of the Economic and Social Council, Permanent Sovereignty over national resources in the occupied Arab territories, Report of the secretary General (A/32/204, 11 October 1977).

### Alternative Estimates of the War Losses

We present below three estimates of the adverse economic effects of 1967 war based on three approaches which differ in the extent of coverage of whatever is meant by the war losses, as well as in the extent to which a certain factor or group of factors are considered to be the principal contributor to the war losses. No single approach was chosen a priori as the correct approach to measuring the war losses, on the grounds that it is difficult to envisage a unique path which the economy would have followed had the war conditions not existed.

Whatever the approach adopted, the following assumptions were made;

- a) It is assumed that the adverse effects of the war will continue until the year 1983,
- b) Since no "actual" series existed for GDP between 1978 and 1983, it was necessary to estimate GDP or its rate of annual growth during that period. This was done by "correcting" the target rates of growth of the new five year plan 1978-1982, using what may be called the expected rates of plan implementation. In no case however were we willing to accept rates of growth above

since higher rates would be rather hard to justify. \*

c) It is assumed that the maximum rate of growth under the no-war conditions is 9%. This is indeed a conservative estimate, since it is equal to the assumed maximum rate of growth under war conditions for those years. \*\*

d) All calculations were made in terms of 1970 prices and then converted to 1977 prices, using the official estimates of price increases during that period provided by the Ministry of Planning.

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\* The correction factor used was 90% for the growth rate of the first year of the plan and 70% of the remaining years. The planned and corrected rates of growth are given below

Year	1978	1979	1980	1981	1982
Planned	9.4%	12.3%	12.4%	12.5%	12.6%
Corrected	8.46%	8.61%	8.68%	8.75%	8.82%

Note that in the preliminary report we assumed, due to lack of data at that time, that the rate of growth of G.D.P. for 1976 and 1977 is 5.5% which was the average of the rates realized in 1970-1975. In present calculations the actual rates which became available were used (7.3% for 1976 and 8.3% for 1977). Previously the maximum rate of growth assumed was 8% which is now replaced by 9% in view of the performance of GDP in 1976 and 1977 and the plan targets which are affected by the recovery of some oil fields in Sinai, improvements under way of the Suez Canal and the new finds of oil and minerals.

\*\* The maximum rate of growth used in the preliminary report was 8%. The higher rate now used (9%) was chosen in order to take account of the improvements of the Suez Canal now under way and the discovery of new oil fields and mineral deposits.

Let us now describe the different approaches used in the estimation of the war losses and present the alternative estimates derived from them. The series of "actual" and projected GDP in war and non-war conditions in terms of 1975 prices, together with the estimates of war losses in terms of 1977 prices are given in Table (1).

Alternative I:

It is assumed here that the average rate of growth achieved during Egypt's first five-year plan (6.7%) would have continued unchanged during the period 1966-67 - 1974. Though this rate is somewhat high when judged against Egypt's past growth record, it does not seem unrealistic. Indeed it could be argued that this rate may be taken as a lower, rather than upper, limit for Egypt's growth capabilities. \* This is so because this rate was achieved under no particularly favourable conditions. Indeed the Years of the first five-year plan were marked with major structural changes (nationalization, land reform, initiation of centralized planning mechanisms, etc.) which while contributed significantly to economic

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\* Bent Hansen suggests that the "highest average growth rate actually sustained for a prolonged period may be taken as a lower limit to physical growth possibilities, unless particularly favourable conditions that no longer exist prevailed. If special obstacles in the past can be removed the actual limit for growth would be correspondingly higher", See: Bent Hansen, Economic Development in Egypt, The Rand Corporation, October 1969, p.15.

growth in some respects, may have had some destabilizing effects on the course of the economy. Moreover the second half of that period witnessed the Yemen war which imposed several strains and pressures on the economy. Given time, the new system would have been stabilized, some of the hinderances removed, and the economy's growth capacity enlarged.

As for the years 1975 - 1983, the 6.7% rate of growth was considered too low in view of the actual performance of GDP under the continuing war conditions and the expected rise in its rate of growth following the new oil and mineral discoveries and the improvements of the Suez Canal. A rate of 9%, which does not appear too high in comparison with the rates actually achieved in recent years, was therefore used for the period 1974 - 1983.

According to this approach, the war losses are estimated at LE 29.424 billion in 1977 prices.

Alternative 2: (This is the model used in the main body of the preliminary Report). Instead of assuming a rate of growth in non-war conditions; we made an attempt here to calculate the expected rates of growth from a GDP growth equation, initially estimated as part of a 4-equation model whose object was to investigate the

Table (1)  
Alternative Estimates of G.D.P. in Non-War Conditions  
and the Corresponding Estimates of the War Losses

Year	Actual and projected GDP under war conditions L.E. Million	Estimates of Projected GDP in non-war Conditions LE million		
		1975 prices		
		Alternative 1	Alternative 2	Alternative 3
1966/67	3196.8	3395.2	3373.9	3285.7
1967/68	3096.1	3622.7	3586.4	3277.2
1968/69	3284.0	3865.3	3822.0	3564.6
1969/70	3516.5	4124.4	4083.5	3916.5
1970/71	3683.9	4400.7	4374.2	4212.6
1971/72	3876.8	4695.5	4697.9	4550.8
1972/73	4059.0	5010.1	5059.2	4892.6
1974	4187.8	5345.8	5462.9	5184.2
1975	4599.5	5826.9	5914.7	5838.9
1976	4935.3	6351.4	6421.6	6428.7
1977	5344.9	6923.0	6991.8	7142.3
1978	5797.0	7546.1	7621.1	7785.1
1979	6296.3	8225.2	8306.9	8485.7
1980	6842.7	8965.5	9054.6	9249.5
1981	7441.5	9772.3	9869.5	10081.9
1982	8097.8	10651.8	10757.7	10989.3
1983	8826.6	11610.5	11725.9	11978.3
War losses (1975 prices)				
LE billion		23.249	24.041	23.77
War losses (1977 prices)				
LE billion		29.424	30.426	30.09



interactions between population growth and economic development\*. In this equation the rate of growth of GDP in year  $t$   $(\Delta Y/Y)_t$  was supposed to be dependent on the rate of growth of demand for labor  $(\Delta L/L)_t$ , the rate of growth of investment  $(\Delta I/I)$ , the level of per capita consumption lagged 8 years  $(C/P)_{t-8}$  and a dummy variable  $D$  which takes the value 1 for the war years and 0 for other years. The model in question was estimated by 2-stage least squares using data for the period 1952-1971. The estimated G.D.P. growth equation was:

$$\begin{aligned} \left(\frac{\Delta Y}{Y}\right)_t = & -0.13034 + 0.02820 \left(\frac{\Delta L}{L}\right)_t + 0.18739 \left(\frac{\Delta I}{I}\right)_t + \\ & 0.00355 \left(\frac{C}{P}\right)_{t-8} - 0.01265 D \end{aligned}$$

This equation was used to forecast the expected rates of growth on the assumption of non-war conditions ( $D = 0$ ), using values of the explanatory variables based largely on the developme

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\* See, I.El-Issawy, "Exploring the interactions between population growth and economic development by means of a simultaneous equations model", IIth conference of statistics, Institute of Statistical Studies and Research Cairo University, April 1975, Cairo. The model was initially designed for an I.N.P./FAO. Joint research Project; "Population, Employment and Productivity in Egyptian Agriculture" INP., Cairo, Dec. 1974 (unpublished report

of those variables in the period 1960 - 66. The expected rates of growth rose from around 6% in 1966/67 to 9.2% in 1978 and 10.8% in 1983. The 9% ceiling was applied to the expected rate of growth from 1978 onwards.\*

This method gave an estimate of the war losses of L.E. 30.426 billion in 1977 prices.

Alternative 3:

This alternative is based on a calculation of the rate of GDP growth differential as between peace and war conditions from a macro-economic multisectoral model, originally used for explorin

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\* The rates of growth previously calculated from this equation in the preliminary report tended to increase very rapidly to the extent that a rate of 14% was obtained for 1983. Reexamination of the results has shown that such behaviour of the rate of growth was merely due to a misinterpretation of the factor  $(\Delta I/I)$  as the rate of investment (I/GDP) rather than the rate of increase of investment as is the case in the present calculation.  $(\Delta I/I)$  was reduced from the incorrect 12% to 7%.  $(\Delta L/L)$  was marginally reduced from 2.5% so did the rate of increase of (C/P) from 2% to 1.5%.

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the development alternatives of the Egyptian economy. The idea is to attempt to reflect at least part of the war losses by generating two projections of GDP, one on the assumption of a war economy and the other on the assumption of a non-war economy. The structure postulated for the economy is similar to the one observed after 1967 in the first case and to that observed in the first half of the sixties in the second case. Comparison of GDP growth in the two simulated economies will thus reveal at least part of the impact of the war on the Egyptian economy.

Among the factors taken into consideration in this exercise, we may note the following: the rise in government expenditure as per cent of GDP from 16.8 in 1960 to 22.5% in 1967 and 29.2 in 1974; the shift in the structure of production and investment, with the share of industry in GDP falling from 27.1% in 1965/66 to 26.2% in 1974, that of agriculture rising from 28.4% to 33.6% and that of the services sector falling from 43.1% to 40% between those two years. Further, and of particular significance there is the slowdown of the pace of the industrialization move-

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\* See: Sakr A. Sakr, Development Alternatives in Egypt in 1974/ INP memo 998 (External), INP, Cairo, 1971. The model is described more fully in appendix 4.1.

ment initiated in the early 1960's which had serious effects on the growth of income and employment. Moreover, account was taken of the mounting foreign debt, the decline in the export capabilities and the sharp rise in the import bill. Clearly, this leaves out the effects of declining efficiency of capital and reduced productivity of labour and the serious drop in the rate of savings.

The projections obtained from the model indicate that GDP grew at the rate of 4.8% in the simulated war economy and 7.6% in the simulated non-war economy. This suggests a drop in the rate of GDP growth of 2.8 percentage points as a result of 1967-1977 war. On the basis of this growth differential, the war losses are estimated at LE 30.093 billion in 1977 prices.

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\* The difference between this estimate and the one given in the preliminary report is merely due to the updating of the hypothetical rates of growth for 1967 and 1977 and raising the maximum rate of growth for the period 1978 - 1983 from 8% to 9%, and the corresponding correction of the series of projected GDP, using the same rate of growth differential as in the earlier report.

Summary and Conclusions

The findings of the previous sections may be summarized as follows:

<u>Estimates of the War Losses</u>	<u>L.E. billion, 1977 prices</u>
Alternative 1	29.424
Alternative 2	30.426
Alternative 3	30.093

All alternatives take no account of the adverse effects of the decline in capital in the form of structural bottlenecks and deterioration in the efficiency of capital utilization and the productivity of labor. The three estimates turn out to be very close to one another. But, of course, none of these estimates can be said to reflect in a precise manner the effect to such factors as the decline in capital efficiency and labour productivity, the burden of the massive increase in foreign indebtedness, the distortions arising from the mounting inflation and the all too obvious deterioration in public utilities.

On the basis of the foregoing discussion, we believe that even the highest of the estimates obtained may be conservative estimate.

V. CONCLUDING  
REMARKS

Having presented the sectoral and macro-economic estimates of the war losses, we may now attempt to "select" an estimate which may be considered reasonable, and realistic. However, it should be emphasized that the verb "select" may not be entirely appropriate in the context of confronting the sectoral estimate with the macro estimate. This is so because these two estimates are not perfect substitutes. Nor are they comparable. Each estimate is based on a different concept of war losses and is arrived at on the basis of different assumptions and methods of computation. The sectoral estimate is based on a partial conception of the war losses. With each sector focussing on the losses from its own point of view, it is almost certain that some loss elements will be missed out and that the impact of the losses in one sector on the performance of the other sector will not be fully taken into account. Hence, the sum of the sectoral losses is bound to fall short of the real losses incurred by the economy. In contrast, the macro-estimate is based on a comprehensive view of the national economy which recognizes the linkages and interrelations among the different sectors.

Given these considerations, it was our policy right from the beginning to regard the sectoral estimates as mere indicators of order of magnitude, and possibly to use them as a check on

macro estimate in the limited sense that the sectoral estimate sets a floor to the macro estimates.

Therefore, we consider the macro-estimates of the war losses (around L.E. 30 billion) to be the more complete" ones. As noted previously, we consider these to be rather conservative estimates, since the methods used in their calculation did not take all loss-generating elements into account, either because of data limitations, or because of the multiplicity of omitted factors, each of which is too small but all together they may add up to something significant, or because of difficulties of quantification. For instance, such factors as the rapid increase in foreign indebtedness, problems of liquidity and inflation, the deterioration in the quality of public services, etc, are not properly considered. Another important factor is the impact of the war on the system of planning and management of the economy. Comprehensive long and medium term national planning was abandoned, and replaced by partial, annual plans in view of the uncertainties which the war situation created and the supremacy of national security in deciding expenditure and investment priorities. The detrimental effects of this factor on efficiency are self-evident.



Our macro estimates may also be regarded as underestimates for another reason. In calculating the losses, we expressed everything in terms of 1977 prices, using official price indices. Such procedure is bound to cause underestimation for two reasons. On the one hand, official price indices are well known to underestimate the rate of price increase because some goods and services are heavily subsidized whereas others are subject to official pricing. Thus, using official price indices does not reveal the real cost or value of the goods and services concerned. On the other hand, losses which are expected to materialize after 1977 are also expressed in terms of the 1977 price level, and hence their real magnitude is undervalued.