



## **AMIR 2.0 Achievement of Market-Friendly Initiatives and Results Program**

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### **Conduct Economic Impact Study for Tourism Sector - Phase 1 & 2**

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Final Report  
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**Data Page**

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## **Abstract**

A study of year 2000 Tourist expenditure in Jordan and Jordanian Carrier receipts has been completed. The definition “Tourists” is confined to visitors from abroad, without inclusion of domestic tourists. A 54-sector input-output model has been applied to this expenditure and carrier receipts, so as to estimate economic impacts of three kinds: a) direct; b) indirect; c) induced.

A year 2000 JD 512.40 million (m) of Tourist expenditure plus JD 110.05m of Carrier receipts make a combined stimulus of JD 622.45m, for which impacts have been estimated by the model.

This JD 622.45m has been broken down and analyzed separately for each of three Tourist nationalities: 1) Jordanian JD 151.40m, 2) Arab JD 219.35m, 3) Foreign JD 251.70m.

The estimated impacts are:

- Total GDP (at market prices) impact is JD 662 million, 11.0 percent of the State total.
- Total Government revenue impact is JD 135m, 8.4 percent of its State total.
- Total Employment impact is an estimated 108,000 full-time equivalent jobs, 10.3 percent of the estimated matching State total.
- For Imports of JD 130m absorbed in the economic activities generated by the stimulus, a residual JD 492m comprises a net Credit in the Balance of Payments due to these year 2000 Tourist and Carrier receipts.

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## **Executive Summary**

The Employment Agreement Annex C gives the following Scope of Work Description:

“To conduct a study on the impact of tourism economy in Jordan through various data analysis with a view to provide information for planners and decision-makers in both the public and private sectors. This information should provide a better understanding of the size, nature, and character of Tourism sector in Jordan, and of how it interacts with other sectors of the economy. An important part of this assignment is to develop and provide an appropriate model to measure economic impacts of Tourist expenditure, by way of GDP, Government Income, and employment.”

A study of year 2000 Tourist expenditure in Jordan and Jordanian Carrier receipts has been completed, as described in the report following. The definition “Tourists” is confined to visitors from abroad, without inclusion of domestic tourists.

A 49-sector input-output model has been developed and applied to this expenditure and carrier receipts, so as to estimate economic impacts of three kinds:

1. direct;
2. indirect;
3. induced.

Detail of the methodology used is set out in a series of appendices leaving the text of the report to deal with the economic impacts that arise from the analysis. The model is formally described in Appendix A below, with all background calculations recorded in the Excel notebook comprising Appendix E, and with descriptive notes in Appendix D. Thus, all calculations could be repeated, if given different numerical data to work on.

A year 2000 JD 512.40 million (m) of Tourist expenditure plus JD 110.05m of Carrier receipts make a combined stimulus of JD 622.45m, for which impacts have been estimated by the model. This JD 622.45m is 24.8 percent of the JD 2,507.0m Exports of Goods & Services of year 2000, and has been broken down and analysed separately for each of three Tourist nationalities: 1) Jordanian JD 151.40m, 2) Arab JD 219.35m, 3) Foreign JD 251.70m.

The most important impacts are as follows:

- The estimated total GDP (at market prices) impact is JD 662.0 million, 11.0 percent of the State total.
- Total Government revenue impact is JD 134.8m, 8.4 percent of its State total.
- Total Employment impact is an estimated 108,153 full-time equivalent jobs, 10.3 percent of the estimated matching State total.
- For Imports of JD 130m absorbed in the economic activities generated by the stimulus, a residual JD 492m comprises a net Credit in the Balance of Payments due to these year 2000 Tourist and Carrier receipts.

## **1. SUMMARY AND MAIN CONCLUSIONS**

- In 2000 there were an estimated 2,549,109 visitors to Jordan and they spent JD 512.40 million in Jordan, together with JD 110.05 million on passenger fares to Jordanian Carriers, making a combined total JD 622.45 million receipts.
- Tourism has an important impact on the level of economic activity in Jordan. In 2000 it contributed 11 per cent of the value of Gross Domestic Product (at market prices).
- Tourism is a major earner of foreign exchange. In 2000 it brought in JD 622.45 million. This comprised 25 per cent of year 2000 exports of goods and services. These contributions have had an important stabilizing influence on the Balance of Payments. The net Credit contribution (after allowing for JD 130 million Imports of purchased inputs) is JD 492 million.
- Tourism provides income and employment for a large number of people. Its year 2000 impact is estimated to support 108,153 full-time equivalent jobs, about 10 per cent of total employment.
- Tourism is an important contributor to Government revenue. In year 2000 visitor expenditure generated JD 134.8 million, thus providing 8.4 per cent of Government revenue.
- The main tourism impact is direct, occurring in the hotels, restaurants, etc., where the tourist money is spent. The indirect impact occurs through suppliers of goods and services to hotels, restaurants, etc. The induced impact occurs through the spending of the household income part of direct plus indirect impacts.
- Because of the relatively small Jordan population (5,182,000 in 2001), there seems to be limited scope for import substitution by way of Jordan manufactures. Thus, little can be done about such leakages. This view has implications for tourism policy.

## **2. DEFINITIONS OF TERMS**

Tourism statistics are now classified under an internationally agreed system devised by the World Tourism Organization (WTO). The format is one in which the term “*visitor*” represents the basic concept for the whole system of tourism statistics. A visitor in this system is classified in the following ways.

### **2.1 International Visitor**

An International Visitor is defined as:

*“... any person who travels to a country other than that in which he or she has his or her usual residence but outside his or her usual environment for a period not exceeding 12 months and whose main purpose of visit is other than the exercise of an activity remunerated from within the country visited”.*

This definition includes the following categories:

- Leisure, recreation and holidays;
- Visiting friends and relatives;
- Business and professional;
- Health treatment;
- Religion/pilgrimages;
- Other

International visitors are further divided into:

*Tourist:* “a visitor who stays at least one night in the country visited”.

*Same-day Visitor:* “a visitor who does not spend the night in the country visited” (this definition includes cruise passengers).

### **2.2 Passenger Fares**

Because of the manner in which official data are normally collected, visitor earnings and carrier receipts are shown separately. The transport of visitors to and from the country is an essential part of any visit. The economic value of tourism to a country is therefore understated if the fares paid by foreign passengers to the carriers of the country they are visiting are excluded. For this reason fares paid by visitors to carriers owned by Jordan air, sea or land operators must be included in any assessment of economic impact.

### **2.3 Domestic Tourist**

The World Tourism Organisation defines a domestic tourist as:

*“... any person residing in a country, who travels to a place within the country outside his or her usual environment for a period not exceeding 12 months and whose main purpose of visit is other than the exercise of an activity remunerated from within the place visited”.*

A similar categorisation applies to domestic visitors as to international visitors, e.g. Tourists (overnight visitors), and Same-Day visitor as well as purpose of visit.

### **3. ECONOMIC IMPACT OF TOURISM**

The impact of tourism on an economy arises from the demand for goods and services purchased by visitors. The process is one whereby tourism expenditure enters the economy by means of payment for goods and services required by visitors, thus becoming income and profit for those operating in the tourism sector. However, those individuals and companies who are the recipients of this expenditure will spend the money they receive on purchasing goods and services, thereby providing income and profit for another group of individuals and companies. This group will, in turn, also spend the money they receive, and this process goes on with each successive round of income and expenditure adding to the overall level of economic activity.

The impact of each successive round is reduced however, because simultaneously there are leakages from the system that have a dampening effect on economic activity. The leakages from the system are as follows.

- Payments for imports give rise to leakages to residents of the countries of origin of the imports.
- Savings, to the extent that they are not re-spent on home-produced goods, also constitute a leakage.
- Taxation also constitutes a leakage in those circumstances where additional revenue is used to reduce a budget or increase a surplus rather than being re-spent.

The process in which an initial expenditure stimulus leads to successive rounds of income and expenditure is known as the multiplier. The economic impacts that arise from the multiplier process can be divided into three stages, which are briefly described:

- direct impact;
- indirect impact;
- induced impact.

It should also be noted that the effects of additional expenditure on economic output depend on whether there is under-utilized capacity within the economy at the time when the increase in expenditure occurs. If resources of labour and capital are fully employed, then an expansion of the tourism sector can only take place by transferring resources out of other sectors with a consequent decline in the output of those sectors.

#### **3.1 Direct Impact (also called First Round)**

At this level there are measured the GDP, employment and government revenue impacts of those who are direct recipients of tourism expenditure. For example, in the case of employment all goods and services purchased by tourists have a direct employment aspect. This covers staff employed in hotels, restaurants, petrol filling stations, etc., used by tourists. It also covers the employment used directly in shops selling the food, beverages, souvenirs, etc., purchased by tourists. In addition, further significant direct employment occurs in public transport, entertainment and other areas where tourists make purchases. What has been described above with respect to the impacts on employment, holds equally in relation to the impacts on GDP and government revenue. This definition of Direct Impact applies to sales “at purchasers’ prices”.

### **3.2 Indirect Impact, Through Suppliers**

The direct purchase of goods and services by tourists is facilitated through the accommodation and distribution sectors. However, these sectors are in turn dependent upon supplied inputs such as raw materials and energy and goods for resale from other sectors of the economy and from imports. Consequently, the employment and other impacts that arise as a result of tourism demand at this stage must also be taken into account. All of these background impacts are estimated by the model as 'Indirect' or 'Upstream' impacts, to the extent that such goods and services are produced within the state. Import leakages are allowed for as having zero impact on the national economy.

Regarding goods for resale, these are treated as part of Direct impact, if Tourist purchases are valued "at basic prices". Output of shops is then taken as "gross margin", with the rest of the purchase cost allocated to sales tax, imports, import duties, and goods produced within the state. This aspect needs mention, because valuation at basic prices is used in the model treatment of year 2000 Tourist expenditure in Jordan.

### **3.3 Induced Impact**

The induced impact arises as a result of those individuals within the economy who have received income as a result of the demand for goods and services by tourists, either directly or indirectly as described above, and who then in turn, spend that income on domestically produced goods and services. The process is one whereby household disposable income gets spend and re-spend in successive rounds as the expenditure of one individual becomes the income of another, the process being reduced or 'dampened' in successive rounds by leaks to imports. This induced impact of tourist expenditure is a further real-world impact, which is estimated in detail within the model approach. The aggregation of direct + indirect + induced impacts can be considered as the 'total' impact of tourism on the economy.

### **3.4 Impacts are Incomplete, Without a Full Input-Output Model**

Economic impact assessment using input-output (IO) draws heavily on what is called a transactions table. A transactions table for a particular year is a matrix that sets out in considerable detail the output (materials and services) supplied by each sector in the economy to all other sectors and the inputs (materials and services) received by each sector from all other sectors over the course of the year specified. In the case of Jordan no transactions table has been available and this has caused limitations in the model, stemming from an assumed Irish 1998 IO input cost structure being applied, so as to estimate Indirect impacts. However, direct impacts are the same as those of the full IO treatment, given the available A60 list of Jordan year 2000 sixty sector outputs at basic prices, with related Gross Value Added components and total Intermediate cost. The problem of finding suitable matching sector employment is discussed in Appendix B.

#### 4. TOURISM RECEIPTS IN JORDAN DURING 2000 MATCHED BY OUTPUTS OF GOODS AND SERVICES

It is the demand for goods and services by tourists that gives rise to the various economic impacts. Consequently, the first task is to establish the scale of tourist expenditure on goods and services. Estimates are required in the following areas:

- An estimate of expenditure by international tourists in Jordan.
- An estimate of passenger receipts that arise from Jordan carriers transporting visitors into and out of Jordan by air mainly.

The present report does not cover “domestic tourism” as such. No further mention of this topic will be made, in what follows.

##### 4.1 International Tourism

In the case of a visitor to Jordan, payment for the goods and services purchased represents a flow of money into the kingdom. It is, in effect, an addition to the income of the economy, and this gives rise to impacts on economic activity.

The estimated total for 2000 Visitor Expenditure is JD 622.45 million, comprising JD 512.40m for Tourists and JD 110.05m of Carrier receipts by Jordanian carriers. A breakdown by type of expenditure and nationality of origin appears in Table 4.1, taken from Table 1 of Appendix B below. These figures have been derived by the consultants in agreement with the relevant authorities.

**Table 4.1: Jordan 2000 Tourist Expenditure and Carrier Receipts, with breakdown by three Visitor Nationality Groups and type of expenditure (JD million)**

Item	Jordanian	Arab	Foreign	TOTAL
Total expenditure	122.40	195.83	194.17	512.40
Jordan carrier receipts	29.00	23.52	57.53	110.05
<b>Expenditure + Carrier Receipts</b>	<b>151.40</b>	<b>219.35</b>	<b>251.70</b>	<b>622.45</b>
<b>Breakdown of total expenditure:</b>				
Package tour transport	0.0	0.19	80.58	80.77
Shopping	38.31	31.53	28.35	98.19
Entertainment etc.	12.00	13.31	10.29	35.60
Transport within Jordan	19.46	17.24	12.43	49.13
Studies	3.67	7.64	1.75	13.06
Medical	9.06	48.77	1.36	59.19
Food and drink	33.29	36.03	26.41	95.73
Accommodation	2.57	30.74	24.46	57.77
Other	4.04	10.38	8.54	22.96
<b>Total Expenditure</b>	<b>122.40</b>	<b>195.83</b>	<b>194.17</b>	<b>512.40</b>

The first two rows are based on estimated 2000 numbers of Tourists as follows: Jordanian 332,469; Arab 1,600,841; Foreign 615,799; Total 2,549,109. These year 2000 numbers have been estimated by applying (1998 tourist numbers / total departures numbers) ratios to year 2000 departures numbers.

The Total Expenditure of year 2000 has been estimated by applying the ratios (estimated Tourist numbers 2000 / Tourist numbers 1998) to “agreed” 1998 Expenditures, as first estimates. These have then been rescaled uniformly, so as to fit the 2000 aggregate 512.40 (in JD million units). This aggregate is shown as “Travel” receipts (Services exports) in Table 22.14 (page 236) of **Statistical Yearbook 2001**. The resulting estimates are 122.40 for Jordanian tourists, 195.83 for Arab, and 194.17 for Foreign tourists.

The related Jordanian Carrier receipts have been estimated in a similar way, by using the same grossing and rescaling factors applied to 1998 data as agreed with Jordanian officials. Resulting year 2000 estimates are 29.00 for Jordanian tourists, 23.52 for Arab, and 57.53 for Foreign tourists, making a total 110.05 JD million.

Thus, as shown in Table 4.1 third row, a combined total JD 622.45 million for the year 2000 represents the total earnings from tourism and it is this figure that will form the basis of the forthcoming analysis.

#### **4.2 Demand Matched by Supply**

Table 4.2 matches 2000 Tourist expenditure and Carrier demand of Table 4.1 above by required Jordan supply of goods and services **all at basic prices**. This matching is a crucial step towards impact estimation. Fourteen item-groups are listed on the left, including twelve sector outputs, one import cif total and one product tax total. These figures are taken from Table 4 of Appendix B below, which details how they are derived from Table 4.1 data.

**Table 4.2: Sectoral stimuli for Tourism 2000 Impact Analysis (JD million)**

<b>Sector</b>	<b>Jordanian</b>	<b>Arab</b>	<b>Foreign</b>	<b>Combined</b>
16)Tobacco	2.40	1.98	1.77	6.15
17)Textiles	1.38	1.13	1.01	3.52
23)Petrol	1.21	1.01	2.80	5.02
26)Non-metal	7.27	5.99	5.40	18.66
28)Fab metals	1.39	1.16	1.04	3.59
52)Retail trade	8.88	7.30	6.89	23.07
55)Hotels&res	33.00	61.44	46.81	141.25
60)Land transp	17.90	16.04	85.57	119.51
62)Air transpt	26.68	21.64	52.93	101.25
80)Education	3.67	7.64	1.75	13.06
85)Health	9.06	48.77	1.36	59.19
92)Recreation	11.04	12.24	9.47	32.75
Imports cif	9.01	7.41	7.20	23.62
Product Taxes	18.51	25.60	27.70	71.81
<b>TOTAL</b>	<b>151.40</b>	<b>219.35</b>	<b>251.70</b>	<b>622.45</b>

Of the JD 622m total, we see that three sectors account for JD 362m (58%), namely Hotels and Restaurants (JD 141m), Land Transport (JD 120m) and Air Transport (JD 101m). Product Taxes worth JD 72m (11.5%) include Departure Tax, collected mainly at airports. In the absence of any Jordanian information the breakdown of “Shopping” among goods sectors (16) to (28) is based on data available to the consultants from other such studies.

## **5. CONTRIBUTION TO JORDAN GROSS DOMESTIC PRODUCT**

### **5.1 GDP Impact Description**

Gross Domestic Product (GDP) at Market Prices measures the output of economic activity within a country during a specified year and is, therefore, a basic indicator of economic performance. Tourism contributes to that economic output through the demand for goods and services generated by tourists. This chapter measures the extent of the contribution tourism makes to GDP in Jordan during year 2000. The methodology used is set out in detail in Appendix A.

It will be recalled that in Chapter 3, three separate levels of impact were discerned, namely:

- **Direct:** at this level the impacts measured relate to those who are direct recipients of tourism expenditure on goods and services, including those in public transport or other sectors, such as entertainment, where tourists make purchases.
- **Indirect:** at this level the impacts taken into account arise from supplying those inputs required to support tourism purchases, such as raw materials and energy.
- **Induced:** at this level there are measured the impacts arising from the expenditure of disposable household income becoming available through direct and indirect impacts.

### **5.2 Impact of year 2000 Tourist plus Carrier Receipts on Jordan GDP**

A summary of GDP impacts of year 2000 Tourist expenditure, including Carrier receipts, appears in Table 5.1. Also shown in the table are the percentage shares that tourism contributes to total GDP. At the bottom of the table the derived “Normal” multipliers are set out. Separate details appear for each of the three nationalities. Data sources are Appendix B Tables 5 to 8.

The total GDP impact is 662.00 (in JD million units) as shown in column (4). The largest component of this GDP amount is the direct impact, 352.52. Two further components are the 140.00 indirect impact and 169.48 induced impact. Column (5) gives these amounts as percentages of year 2000 State total 6,002.4 GDP at market prices, namely Direct 5.87%, Indirect 2.33 % and Induced 2.82%, making a combined impact comprising 11.03 % of State GDP.

Columns (1) to (3) give nationality details. The Jordanian contribution is 156.77, which is 2.61% of the State total. The Arab contribution is 239.91 (4.00% of total), with the Foreign contribution being 265.32 (4.42% of the State total).

**Table 5.1: The GDP Impacts of Jordan year 2000 Tourist Expenditure plus Carrier Receipts (JD million)**

Item	Jordanian (1)	Arab (2)	Foreign (3)	Total (1) to (3) (4)	Total as % of State total (5)
<b>Direct</b>	82.62	125.30	144.60	352.52	5.87
<b>Indirect</b>	34.27	53.17	52.56	140.00	2.33
<b>Induced</b>	39.88	61.44	68.16	169.48	2.82
<b>Total</b>	156.77	239.91	265.32	662.00	11.03
<b>Total as % of State total</b>	2.61	4.00	4.42	11.03	
<b>Tourist plus Carrier receipts (A)</b>	151.40	219.35	251.70	622.45	
<b>Impacts as proportions of(A): Normal multipliers:</b>					
<b>Direct</b>	0.5457	0.5712	0.5745	0.5663	
<b>Indirect</b>	0.2264	0.2424	0.2088	0.2249	
<b>Induced</b>	0.2634	0.2801	0.2708	0.2723	
<b>Total</b>	<b>1.0355</b>	<b>1.0937</b>	<b>1.0541</b>	<b>1.0635</b>	

These impact values divided by total year 2000 Tourist plus Carrier (shown as row (A)) give the “Normal” multipliers shown in the lower portion of Table 5.1. “Normal” indicates average impact per JD million of such expenditure shown as row (A). The GDP Total multiplier is 1.0635, indicating a 106.35 percent GDP average impact per JD of Tourist plus Carrier year 2000 receipts. Nationality GDP Total multipliers show similar values: 1.0335 for Jordanian, 1.0967 for Arab, and 1.0541 for Foreign. For column (4) combined impacts we find a Direct multiplier of value 0.5663, an Indirect of value 0.2249, and an Induced of value 0.2723.

## 6. IMPACT OF TOURIST PLUS CARRIER ON BALANCE OF PAYMENTS

The Balance of Payments (BP) is a statistical statement that summarises the economic transactions between the domestic economy and the rest of the world. It is divided into two separate accounts. The Current Account covers transactions in goods, services, income and current transfers such as gifts, whilst the Capital and Financial Account records financial claims on the rest of the world and liabilities to the rest of the world.

Expenditure by visitors (Tourists) from abroad plus Carrier receipts are exports of services to the rest of the world (invisible exports) and therefore a BP Current Account item. In the conventional Balance of Payments table, gross visitor expenditure within the domestic economy is recorded as ‘Travel +Credit’ and similar expenditure by residents in the rest of the world is recorded as ‘Travel –Debit’. We first consider the Imports required or absorbed by year 2000 Tourists and related Carrier costs.

### 6.1 Imports required by Tourists plus Carriers during year 2000

Table 6.1 below details the Imports absorbed by Tourists and Jordanian Carriers during year 2000. The State total Imports of Goods and Services for year 2000 is JD 4,109.5 million, with corresponding Exports worth JD 2,507.0 million (Table 22.1, page 223 of **Statistical Yearbook 2001**).

**Table 6.1: The Imports Impacts of Jordan year 2000 Tourist Expenditure plus Carrier Receipts (JD million)**

Item	Jordanian (1)	Arab (2)	Foreign (3)	Total (1) to (3) (4)	Total as % of State total (5)
<b>Direct</b>	9.01	7.41	7.20	23.62	0.57
<b>Indirect</b>	25.50	33.47	47.34	106.31	2.59
<b>Induced</b>	18.98	29.24	32.42	80.64	1.96
<b>Total</b>	53.49	70.12	86.96	210.57	5.12
<b>Total as % of State total</b>	1.30	1.71	2.12	5.12	
<b>Tourist plus Carrier receipts (A)</b>	151.40	219.35	251.70	622.45	
<b>Impacts as proportions of(A): Normal multipliers:</b>					
<b>Direct</b>	0.0595	0.0338	0.0286	0.0379	
<b>Indirect</b>	0.1684	0.1526	0.1881	0.1708	
<b>Induced</b>	0.1254	0.1333	0.1288	0.1296	
<b>Total</b>	<b>0.3533</b>	<b>0.3197</b>	<b>0.3455</b>	<b>0.3383</b>	

Column (4) summarises impacts across nationalities. The total impact is 210.57 (in JD million units), having components 23.62 Direct, 106.31 Indirect, and 80.64 Induced. Column (5) shows percentage shares of the Import total quoted above, the total impact taking 5.12% of the total.

Nationality totals and derived percentage rows are also shown. We find Jordanian tourist plus carrier taking 53.49 (1.30%), Arab taking 70.12 (1.71%), and Foreign taking 86.96 (2.12%). As in Table 5.1, the lower portion of Table 6.1 shows Imports “Normal” multipliers. The column (4) combined nationality result shows a total multiplier of 0.3383, having components 0.0379 Direct, 0.1708 Indirect, and 0.1296 Induced.

## **6.2 The Impact of Tourist plus Carrier on year 2000 Balance of Payments**

For Goods and Services, year 2000 Exports 2,507.0 (in JD million units) are 1,602.5 smaller than Imports 4,109.5, thus showing a BP deficit of 1,602.5 units. We can consider revenue of Tourists plus Carriers as “gross” or “net” Exports.

This Export gross amount is the 622.45 total year 2000 receipts, comprising 24.8 percent of the total Exports 2,507.0. Without this component, Exports would be 1,884.5 units, and the BP deficit would be 2,225.0 units.

A Tourist plus Carrier Export net amount 492.52 can be defined as the gross receipts 622.45 less absorbed Imports 129.93, direct plus indirect (per Table 6.1 column (4)). This net 492.52 units is a “pure” gain on the BP Credit side, and represents 19.6 percent of the official BP 2,507.0 Exports of Goods and Services.

## 7. IMPACT OF TOURIST PLUS CARRIER ON GOVERNMENT REVENUE

### 7.1 Introduction

This chapter brings together the various components of 2000 Government revenue (or income) that occurs as impacts of Tourism and Carriers, and compares them with total 2000 Government revenue. The Tourist plus Carrier estimates appear in Tables 5 to 8 of Appendix B below.

Section 7.2 addresses total Jordan year 2000 Government income, as listed in Table 7.1. Section 7.3 sets out the extent of Government Income derived from tourism and what proportion of total Government Income that is accounted for by tourism in the year 2000.

### 7.2 Jordan year 2000 Government Taxes and Other Revenue

Table 7.1 sets out year 2000 details and subtotals, taken from **Table (5) Central Government Domestic Revenues**. Total 2000 revenue is shown to be JD 1,610.1 million, with ten subtotals giving the major types of taxation. Four components make up the 961.9 (in JD million units) of total Tax revenues, with six further components making up the non-tax revenue worth 648.2 units.

Some five components of the Tax revenue are explicitly treated as costs and/or coefficients in the four Appendices B to E comprising the background research and calculations. These components are a) Corporation Tax, b) Other tax on profits and income, c) General sales tax, d) Departure tax, e) Customs duties on merchandise imports. Non-tax revenues are covered as “Taxes on inputs” which explicitly appear in the component breakdown of GVA, in Appendix B Tables 5 to 9.

**Table 7.1: Jordan year 2000 Government Income Summary (JD million)**

Item Description	2000 Value (1)	2000 Subtotals (2)
1) Taxes on Income and profits		161.0
Corporations	97.3	
Other	63.7	
2) Taxes on Domestic Transactions		520.2
General Sales Tax	464.5	
Departure Tax	21.6	
Other	34.1	
3) Taxes on Foreign Trade		264.7
Customs Duties	260.5	
Other	4.2	
4) Additional Tax		16.0
Total Tax Revenues		961.9
5) Licences		37.4
6) Fees		200.1
7) Revenue from Post		6.1
8) Interest and Profits		140.7
9) Miscellaneous		214.5
10) Repayment		49.4
<b>Total Revenue</b>		<b>1,610.1</b>

### 7.3 Jordan year 2000 Tourist plus Carrier-related Government Revenue

Table 7.2 brings together various year 2000 Government income estimates comprising direct, indirect, and induced impacts of Tourists plus Carrier. The tabular sources are Tables 5 to 9 of Appendix B.

**Table 7.2: Government Income Impacts of Jordan year 2000 Tourist Expenditure plus Carrier Receipts (JD million)**

Item	Jordanian (1)	Arab (2)	Foreign (3)	Total (1)to (3) (4)	Total as % of State total (5)
<b>Direct</b>	21.66	29.22	34.97	85.85	5.33
<b>Indirect</b>	4.07	5.27	7.61	16.95	1.05
<b>Induced</b>	7.53	11.61	12.88	32.02	1.99
<b>Total</b>	33.26	46.10	55.46	134.82	8.37
<b>Total as % of State total</b>	2.07	2.86	3.44	8.37	
<b>Tourist plus Carrier receipts (A)</b>	151.40	219.35	251.70	622.45	
<b>Impacts as proportions of (A): Normal multipliers:</b>					
<b>Direct</b>	0.1431	0.1332	0.1389	0.1379	
<b>Indirect</b>	0.0269	0.0240	0.0302	0.0272	
<b>Induced</b>	0.0497	0.0529	0.0512	0.0514	
<b>Total</b>	<b>0.2197</b>	<b>0.2102</b>	<b>0.2203</b>	<b>0.2166</b>	

Column (4) summarises impacts across nationalities. The total impact is 134.82 (in JD million units), having components 85.85 Direct, 16.95 Indirect, and 32.02 Induced. Column (5) shows percentage shares of the Income total 1,610.1 quoted above, the total impact taking 8.37% of this total Government revenue.

Nationality totals and derived percentage rows are also shown. We find Jordanian tourist plus carrier taking 33.26 (2.07%), Arab taking 46.10 (2.86%), and Foreign taking 55.46 (3.44%). As in Table 5.1, the lower portion of Table 7.2 shows Government Income “Normal” multipliers. The column (4) combined nationality result shows a total multiplier of 0.2166, having components 0.1379 Direct, 0.0272 Indirect, and 0.0514 Induced.

## 8. EMPLOYMENT IMPACTS OF TOURIST PLUS CARRIER

### 8.1 General Background and Approach

The demand for goods and services by Tourists causes a requirement for labour. In addition to those businesses that provide services directly to visitors (such as hotels, restaurants and taxi or car-hire operators), further businesses supply the tourism sector, with consequent up-stream effects on other economic sectors. Employment is thus being generated in all these various business activities. In addition, expenditure of household income, due to Tourist expenditure plus Carrier receipts, generates further “Induced” employment throughout the Jordan economy.

Employment impacts have been estimated in parallel with GDP impacts throughout the tables of Appendix B. The methodology, accordingly, does not need to be explained again. “Average annual” assumptions again apply everywhere within the 49-sector Jordan model structure. This means that employment is taken in direct proportion to sector gross output, for estimated “full-time equivalent” number of jobs matching gross output of year 2000. The State total is estimated by the consultants to be 1,049,849 full-time equivalent jobs for year 2000.

### 8.2 Employment Impacts of year 2000 Tourist plus Carrier

Table 8.1 brings together direct, indirect, and induced employment impacts of 2000 Visitor spending, as detailed in Appendix B tables.

**Table 8.1: Employment Impacts of Jordan year 2000 Tourist Expenditure plus Carrier Receipts (number of full-time equivalent jobs)**

Item	Jordanian (1)	Arab (2)	Foreign (3)	Total (1)to (3) (4)	Total as % of State total (5)
<b>Direct</b>	13,566	22,017	23,891	59,474	5.67
<b>Indirect</b>	5,778	9,553	8,231	23,562	2.24
<b>Induced</b>	5,911	9,106	10,100	25,117	2.39
<b>Total</b>	25,255	40,676	42,222	108,153	10.30
<b>Total as % of State total</b>	2.41	3.87	4.02	10.30	
<b>Tourist plus Carrier receipts (A)</b>	151.40	219.35	251.70	622.45	
<b>Impacts as proportions of (A): Normal multipliers:</b>					
<b>Direct</b>	89.60	100.37	94.92	95.55	
<b>Indirect</b>	38.16	43.55	32.70	37.85	
<b>Induced</b>	39.04	41.51	40.13	40.35	
<b>Total</b>	<b>166.81</b>	<b>185.44</b>	<b>167.75</b>	<b>173.75</b>	

Column (4) summarises impacts across nationalities. The total impact is an estimated 108,153 jobs, having components 59,474 Direct, 23,562 Indirect, and 25,117 Induced. Column (5) shows percentage shares of the Employment total 1,049,849 quoted above, the total impact taking 10.30% of this total.

Nationality totals and derived percentage rows are also shown. We find Jordanian tourist plus carrier taking 25,255 (2.41%), Arab taking 40,676 (3.87%), and Foreign taking 42,222 (4.02%). As in Table 5.1, the lower portion of Table 8.1 shows Employment “Normal” multipliers. The column (4) combined nationality result shows a total multiplier of 173.75, having components 95.55 Direct, 37.85 Indirect, and 40.35 Induced.

**APPENDIX A**

**A SHORT OUTLINE OF THE INPUT-OUTPUT MODEL APPROACH**

The main attraction of the input-output model is that it provides a very detailed picture of the structure of the economy at a particular point of time. It includes all the transactions (both purchases and sales) which occurred during the time interval (usually one year), and thus provides a basis for the detailed analysis of intersectoral interrelationships within the economy. If there is a change in the purchasing or sales pattern of any industry, the flow-on effects to every other industry can be calculated. This makes the input-output model very attractive for regional impact analysis, as the effect of (say) a development project on each and every sector in the region can be traced. Thus the additional infrastructure requirements (transport, water, electricity, public administration, etc.) can be estimated as well as the additional physical inputs which will be required through trade related industries.

The application of input-output analysis in an economic impact study basically involves two steps. The first is the acquisition or construction of an appropriate national or regional transactions table, and secondly, the transformation of the initial impact or stimulus into a form which is compatible with the input-output equations. The input-output multipliers and flow-on or indirect impacts can then be estimated.

### Measuring Economic Impact

Tourism is referred to as an industry, but this is a misnomer. From the perspective of the tourist, he or she demands an extraordinary range of goods and services during the course of a holiday, or a visit to another country. The needs of tourists are not met by accommodation, transport, dining and one or two other basics alone, but extend to such diverse areas as banking, medical and dental care, security, manufacturing, telecommunications, sewerage and hundreds of others. From the perspective of the supply side, some operators, such as an hotelier, see themselves as essentially in the tourism business. Others such as a medical doctor or a postman would of course, not. But, nevertheless, for that period of time in which they are working to meet the needs of the tourist they are, in fact, a part of the tourist 'industry'.

Tourism, therefore, is not a self-contained industry with neatly defined borders, and this gives rise to difficulties when it comes to measuring economic impact. During the course of a year tourists, businesses and households use the services of transport, hotels, catering, shops, entertainment and many others, but it is not evident how much is used by each group. Thus a measurement problem exists as to the shares of these services purchased by tourists, and the consequent impact on the economy.

This measurement problem can be solved by an input-output model. That this approach is the best available explains its worldwide use (and sadly abuse by some) for measuring tourism-related impacts.

### The Input-Output Approach

The input-output (IO) approach to estimating economic impacts of tourism proceeds as follows.

International tourism expenditure and passenger fares are 'invisible exports' defined as part of the purchase of 'final output' of the economic system and must, therefore, be expressed as outputs of economic activities, government revenue, etc., for example, transport, taxes on expenditure, and so on. Within this structure three levels of impact are measured:

- **Direct impact** : at this level the GDP, employment and government revenue impacts of those who are direct recipients of tourism expenditure are measured, such as hotel, catering and transport operators.
- **Direct + indirect**: at this level the economic activity that results from supplying the operators at the direct level is also included.
- **Direct + indirect + induced** : the incomes and profits that are spent by operators and suppliers, on domestically produced goods and services, give rise to further impacts on GDP, employment and government revenue, and these impacts are added to the direct and indirect levels.

For this kind of impact estimation, two data sets need to be brought together:

- tourism expenditure in a format adapted to the IO model being used, with each year having its own detailed expenditure pattern;
- IO sectoral ‘normal’ multipliers for employment or GDP, at a greater or lesser degree of complexity, for example, ‘direct plus indirect’ or ‘direct’, respectively. Each such ‘normal’ multiplier gives the average employment (in man years) or GDP (in JD million) implied by JD 1 million of final demand for the output of a particular sector. Here also, each year requires its own specific multiplier values.

Multiplication of the first data set by the second, for each individual IO sector, gives the employment or GDP impact estimate, to be aggregated over sectors. As mentioned above, there are three versions of each IO sectoral normal multiplier denoted: (i) ‘direct’; (ii) ‘direct plus indirect (partial)’; (iii) ‘direct plus indirect plus induced (complete)’. These reveal increasing orders of complexity of economic interaction as one moves from (i) to (iii), and also increasing numerical size of the multiplier. There are, accordingly, three impacts estimates for each IO sector’s employment or GDP contribution to the overall impact of tourist expenditure by way of employment or GDP.

**APPENDIX B**  
**JORDAN 2000 TOURISM IMPACTS**

## Introduction

This appendix discusses and presents economic impacts of Tourists (meaning Visitors from abroad) in Jordan, derived from their year 2000 expenditure in Jordan. Also included are impacts of their fares paid to Jordanian carriers for bringing them into Jordan and/or taking them out when their visit was ended.

Basic expenditure details are first presented and discussed. Allocation of these as purchases of outputs of Jordanian goods and services (and possible imports) during year 2000 are next considered. Impact detailed calculations are made on Sheet 5 of Appendix E. These are then summarized and discussed in further tables of this memo.

## Tourism 2000 Basic Expenditure (Table 1)

The following figures have been derived or estimated by the consultants from available background data.

**Table 1: Jordan 2000 Tourist Expenditure and Carrier Receipts by three Visitor Nationality Groups (JD million)**

Item	Jordanian	Arab	Foreign	TOTAL
Total expenditure	122.40	195.83	194.17	512.40
Jordan carrier receipts	29.00	23.52	57.53	110.05
<b>Expenditure + Carrier Receipts</b>	<b>151.40</b>	<b>219.35</b>	<b>251.70</b>	<b>622.45</b>
<b>Breakdown of total expenditure:</b>				
Package tour transport	0.0	0.19	80.58	80.77
Shopping	38.31	31.53	28.35	98.19
Entertainment etc.	12.00	13.31	10.29	35.60
Transport within Jordan	19.46	17.24	12.43	49.13
Studies	3.67	7.64	1.75	13.06
Medical	9.06	48.77	1.36	59.19
Food and drink	33.29	36.03	26.41	95.73
Accommodation	2.57	30.74	24.46	57.77
Other	4.04	10.38	8.54	22.96
<b>Total Expenditure</b>	<b>122.40</b>	<b>195.83</b>	<b>194.17</b>	<b>512.40</b>

The first two rows are taken from data supplied by the authorities, and are based on estimated 2000 numbers of Tourists as follows: Jordanian 332,469; Arab 1,600,841; Foreign 615,799; Total 2,549,109. These year 2000 numbers have been estimated by applying (1998 tourist numbers / total departures numbers) ratios to year 2000 departures numbers.

The Total Expenditure estimates of year 2000 have been estimated by applying the ratios (estimated Tourist numbers 2000 / Tourist numbers 1998) to “agreed” 1998 Expenditures, as first estimates. These first estimates have then been rescaled uniformly, so as to fit the 2000 aggregate 512.40 (in JD million units). This aggregate is shown as “Travel” receipts (Services exports) in Table 22.14 (page 236) of **Statistical Yearbook 2001**. The resulting estimates are 122.40 for Jordanian tourists, 195.83 for Arab, and 194.17 for Foreign tourists.

The related Jordanian Carrier receipts have been estimated in a similar way, by using the same grossing and rescaling factors applied to 1998 “agreed” amounts. (Here, “agreed” means in agreement with Jordanian experts). Resulting year 2000 estimates are 29.00 for Jordanian tourists, 23.52 for Arab, and 57.53 for Foreign tourists, making a total 110.05 JD million. Thus, as shown in Table 1 third row, a combined total JD 622.45 million is the year 2000 overall amount to be analyzed, so as to provide economic impacts estimates.

The lower part of Table 1 shows a breakdown of Tourist 2000 expenditure into nine categories. These figures are derived from percentages on Sheet 14 of the file “Arrivals and departures stats.xls”. The Expenditure breakdown has been uniformly rescaled by Henry so as to provide Table 1 (year 2000) estimates fitting the required totals.

### Matching Table 1 Expenditure with sector outputs (Table 2)

Detailed data on Tourist expenditure during 2000 are not available from Jordanian sources. However, the consultants have been able to access information available to them from similar studies. Reasonable allocations of Table 1 amounts to sector outputs and possible Taxes are made in Table 2 following, covering the full year 2000 JD 622.45 million Expenditure and Carrier Fares. Discussion of Table 2 entries appears below the table.

**Table 2: Allocation of Table 1 expenditure and Carrier Receipts to sector outputs (values in JD million)**

Item (1)	Table 1 Total JDm. (2)	Sector allocation (3)	Total JDm. (4)	Jordanian component (5)	Arab Compon (6)	Foreign Compon (7)
Carrier rcpts.	110.05	62)Air trans	110.05	29.00	23.52	57.53
Package tour	80.77	60)Land	80.77	0.0	0.19	80.58
transport		transpt				
Entertainment	35.60	92)Recreat	35.60	12.00	13.31	10.29
Transport in	49.13	60)Land	49.13	19.46	17.24	12.43
Jordan		transpt				
Studies	13.06	80)Educatio	13.06	3.67	7.64	1.75
Medical	59.19	85)Health	59.19	9.06	48.77	1.36
Food & drink	95.73	55)Hotels&	95.73	33.29	36.03	26.41
Accommodat	57.77	55)Hotels&	57.77	2.57	30.74	24.46
Other expens	22.96	Depart.Tax	13.50	1.76	8.48	3.26
		23)Petrol	9.46	2.28	1.90	5.28
Shopping	98.19		(98.19)	(38.31)	(31.53)	(28.35)
		16)Tobacco	19.09	7.45	6.13	5.51
		17)Textiles	38.19	14.90	12.26	11.03
		26)Non-met	32.73	12.77	10.51	9.45
		28)Fab.met.	8.18	3.19	2.63	2.36
<b>Total</b>	<b>622.45</b>		<b>622.45</b>	<b>151.40</b>	<b>219.35</b>	<b>251.70</b>

All values are at purchasers prices. Table 2 column (1) repeats Table 1 item list, with column (2) having total values of each item, thus making up the aggregate 622.45 (in JD million units). Columns (3) and (4) show sector allocations and related value totals, respectively. Each such total is divided across the three Tourist nationalities in columns (5) to (7). Most of these entries repeat entries of Table 1, and so do not require discussion.

Column (3) sector allocation uses as guide the roughly estimated available supplies (at basic prices). Column S of Sheet 1 of Appendix E gives sector outputs plus imports available after deducting exports and re-exports and Intermediate inputs, at basic prices. Amounts required by Households appear in Table 4 Part 2 and Table 5 of Appendix C, again at basic prices, after excluding Customs Duties. Thus, column S less latter values gives estimates of available amounts for items relevant to Table 2, as well as for others. **Of central importance towards Table 2 are the “available” amounts: 178.5 of 55) Hotels and restaurants; 286.7 of 60) Land transport; 161.1 of 62) Air transport; 33.1 of 92) Recreation.**

While every effort has been made to ensure the analysis is as rigorous as possible it is accepted that there are limitations imposed by the extent of data available to the consultants. That having been said the results obtained are well within acceptable limits.

The breakdown of two items need comment. “Other expenditure” has 13.50 given to Departure Tax, which is allocated across nationalities pro rata number of Tourists. **Table (5) Central Government Domestic Revenues** shows a total value of 21.6 for year 2000. Pro rata Tourists (2,549.1 thousand) versus Total Departures (4,077.2 thousand), a share worth 13.50 goes to Tourists. The rest of “Other expenditure”, 9.46, is taken to be 23) Petrol for land travel.

The breakdown of “Shopping” is based on data available to the consultants from other similar studies of shopping by foreign tourists. Items and amounts are indicative rather than factual. The allocations across nationalities are pro rata column (4) item breakdown of the total.

**All Components at Basic Prices (Table 3)**

All sector outputs need to be at basic prices, to permit multiplier application towards impacts. This preparation comprises Table 3 following, which draws breakdown patterns from Appendix C, set out across the top of Table 3. Lower portions apply these row proportions to row totals, for each of the three nationalities. The layout of Table 3 should make the method fairly obvious.

**Table 3: Cost components of row items of Tourist 2000 Expenditure and Carrier Receipts (Part 1: Household pattern and derived Jordan Tourist shares) JD million**

Item, by sector	Total Expend (1)	Sales Tax (2)	Trade Margin (3)	Imports cif (4)	Customs Duty (5)	Domestic Output (6)
Households						
16)Tobacco	175.66	63.42	22.91	16.23	16.45	56.65
17)Textiles	43.21	5.75	14.40	17.90	1.17	3.99
23)Petrol	228.14	41.37	20.74	34.62	10.28	121.13
26)Non-metal	14.48	2.41	2.41	1.31	0.09	8.26
28)Fab metals	7.98	1.30	1.49	1.59	0.10	3.50
55)Hotels&res	35.86	2.86				33.00
60)Land transp	104.39	8.35				96.04
62)Air transpt	14.76	1.18				13.58
80)Education	279.34					279.34
85)Health	86.03					86.03
92)Recreation	5.62	0.45				5.17
(Source)		(Tabl 4)	(Tabl 4)	(Tabl 5)	(Tabl 5)	(Tabl 5)
Jordanian						
16)Tobacco	7.45	2.69	0.97	0.69	0.70	2.40
17)Textiles	14.90	1.98	4.97	6.17	0.40	1.38
23)Petrol	2.28	0.41	0.21	0.35	0.10	1.21
26)Non-metal	12.77	2.13	2.13	1.16	0.08	7.27
28)Fab metals	3.19	0.52	0.60	0.64	0.04	1.39
55)Hotels&res	35.86	2.86				33.00
60)Land transp	19.46	1.56				17.90
62)Air transpt	29.00	2.32				26.68
80)Education	3.67					3.67
85)Health	9.06					9.06
92)Recreation	12.00	0.96				11.04
Departure Tax	1.76	1.76				
<b>Total Jordanian</b>	<b>151.40</b>	<b>17.19</b>	<b>8.88</b>	<b>9.01</b>	<b>1.32</b>	<b>115.00</b>

**Table 3: Cost components of row items of Tourist 2000 Expenditure and Carrier Receipts (Part 2: derived Arab and Foreign Tourist shares) JD million**

Item, by sector	Total Expend (1)	Sales Tax (2)	Trade Margin (3)	Imports cif (4)	Customs Duty (5)	Domestic Output (6)
Arab						
16)Tobacco	6.13	2.21	0.80	0.57	0.57	1.98
17)Textiles	12.26	1.63	4.09	5.08	0.33	1.13
23)Petrol	1.90	0.34	0.17	0.29	0.09	1.01
26)Non-metal	10.51	1.75	1.75	0.95	0.07	5.99
28)Fab metals	2.63	0.43	0.49	0.52	0.03	1.16
55)Hotels&res	66.77	5.33				61.44
60)Land transp	17.43	1.39				16.04
62)Air transpt	23.52	1.88				21.64
80)Education	7.64					7.64
85)Health	48.77					48.77
92)Recreation	13.31	1.07				12.24
Departure Tax	8.48	8.48				
<b>Total Arab</b>	<b>219.35</b>	<b>24.51</b>	<b>7.30</b>	<b>7.41</b>	<b>1.09</b>	<b>179.04</b>
Foreign						
16)Tobacco	5.51	1.99	0.72	0.51	0.52	1.77
17)Textiles	11.03	1.47	3.68	4.57	0.30	1.01
23)Petrol	5.28	0.96	0.48	0.80	0.24	2.80
26)Non-metal	9.45	1.57	1.57	0.85	0.06	5.40
28)Fab metals	2.36	0.38	0.44	0.47	0.03	1.04
55)Hotels&res	50.87	4.06				46.81
60)Land transp	93.01	7.44				85.57
62)Air transpt	57.53	4.60				52.93
80)Education	1.75					1.75
85)Health	1.36					1.36
92)Recreation	10.29	0.82				9.47
Departure Tax	3.26	3.26				
<b>Total Foreign</b>	<b>251.70</b>	<b>26.55</b>	<b>6.89</b>	<b>7.20</b>	<b>1.15</b>	<b>209.91</b>

### Sector components organized for Impact Analysis (Table 4)

Table 3 components need to be organized so as to comprise expenditure stimuli for impact analysis, one column applying for each of the three nationalities. Table 4 shows these columns, and also a summary column. Little description is necessary, where fairly obvious arrangements apply. Total trade margin is taken as output of 52) Retail Trade. “Product Taxes” comprises Departure Tax plus Sales Tax plus Customs Duty.

As part of “direct” impacts, we see in Table 4 combined amounts of JD 71.81 million Product Taxes and JD 23.62 million of Imports cif.

**Table 4: Sectoral stimuli for Tourism 2000 Impact Analysis (JD million)**

Sector	Jordanian	Arab	Foreign	Combined
16)Tobacco	2.40	1.98	1.77	6.15
17)Textiles	1.38	1.13	1.01	3.52
23)Petrol	1.21	1.01	2.80	5.02
26)Non-metal	7.27	5.99	5.40	18.66
28)Fab metals	1.39	1.16	1.04	3.59
52)Retail trade	8.88	7.30	6.89	23.07
55)Hotels&res	33.00	61.44	46.81	141.25
60)Land transp	17.90	16.04	85.57	119.51
62)Air transp	26.68	21.64	52.93	101.25
80)Education	3.67	7.64	1.75	13.06
85)Health	9.06	48.77	1.36	59.19
92)Recreation	11.04	12.24	9.47	32.75
Imports cif	9.01	7.41	7.20	23.62
Product Taxes	18.51	25.60	27.70	71.81
<b>Total</b>	<b>151.40</b>	<b>219.35</b>	<b>251.70</b>	<b>622.45</b>

### Direct, Indirect and Induced Impacts (Tables 5 to 8)

Each of the three nationalities requires its own table for direct and indirect impacts, across Tables 5 to 7 below. Table 8 shows estimation of induced impacts for all three nationalities. Detailed impact calculations are made on Sheet 5 of Appendix E, with descriptive comment in the parallel Appendix D. Treatment in Tables 5 to 7 is the same as that of Table 7 of Appendix C.

**JORDANIAN**

Tables 5 and 5A treat direct and indirect impacts of Jordanian Tourist expenditure and Carrier receipts. Table 5 follows immediately below.

**Table 5: Jordanian Tourist and Carrier Direct and Indirect Impacts (JD million)**

Item	Table 4 Jordanian Column  (1)	From domest outputs 1 <sup>st</sup> round (Sheet 5)  (2)	From Intermed. Purchas. 1 <sup>st</sup> round (Sheet 5)  (3)	Col (3) Intermed. 20.79 pro rata col (3) oth(38.98)  (4)	Summary Direct Impact (1) + (2)  (5)	Summary Indirect Impact (3) + (4)  (6)
Gross Value Added		64.11	21.18	11.30	64.11	32.48
Product Taxes	18.51		1.17	0.62	18.51	1.79
Imports	9.01		16.63	8.87	9.01	25.50
Aggregate domestic output	123.88					
Intermediate costs =purchases		59.77	20.79		59.77	
<b>Total</b>	<b>151.40</b>	<b>123.88</b>	<b>59.77</b>	<b>20.79</b>	<b>151.40</b>	
<b>GVA Details:</b>						
Taxes on Inputs		0.81	0.44	0.23	0.81	0.67
Employee Compensatn.		24.22	6.94	3.70	24.22	10.64
Capital Consumption		12.20	3.29	1.75	12.20	5.04
Operating Surplus		26.88	10.51	5.62	26.88	16.13
<b>Other Items:</b>						
Income Tax		0.40	0.21	0.11	0.40	0.32
Profits Tax		1.94	0.84	0.45	1.94	1.29
Household Income for spending		39.28	12.77	6.81	39.28	19.58
<b>Govt. Income Total</b>					21.66	4.07
<b>GDP (GVA + Product Tax)</b>					82.62	34.27
<b>GDP + Imports</b>					91.63	59.77
<b>Employment (number)</b>		<b>13,566</b>	<b>3,768</b>	<b>2,010</b>	<b>13,566</b>	<b>5,778</b>

Table 5 column (5) summarises “Direct” impacts, as detailed in columns (1) and (2). The Jordanian year 2000 Tourist expenditure and Carrier receipts of 151.40 (in JD million units) has direct impacts comprising 64.11 of GVA, 18.51 of Product Taxes and 13,566 Employment jobs. This GVA includes 24.22 of Employee Compensation and 26.88 of Operating Surplus, out of which comes 39.28 of Household Income for spending.

Intermediate costs of Direct impacts are 59.77, having their own impacts shown in column (3), with remaining Intermediate worth 20.79. The latter is distributed in column (4) pro rata column (3) value 38.98 (GVA plus Product Taxes plus Imports), so as to give estimated impacts of this 20.79. The rest of column (4) is filled in by applying the same ratio 20.79/38.89 to column (3) entries.

Column (6) summarises “Indirect” impacts, as detailed in columns (3) and (4). We find 32.48 of GVA, 1.79 of Product Taxes, and 5,778 jobs. This GVA includes 10.64 of Employee Compensation and 16.13 of Operating Surplus, out of which comes 19.58 of Household Income for spending.

Towards the bottom of columns (5) and (6) we can find that the total Government Income impact is 25.73 units, made up of 21.66 Direct and 4.07 Indirect. Likewise, a total GDP (at Market Prices) impact of 116.89 units is comprised of 82.62 Direct and 34.27 Indirect. Adding on Imports to GDP gives 91.63 plus 59.77, which is 151.40 of combined impact, the same as the full Expenditure stimulus. This accords with correct usage of Input-Output modelling towards Direct plus Indirect impacts, for GDP at Market Prices plus Imports.

Table 5A following details the major sectoral contributions to Employment, as generated by Jordanian year 2000 Tourist expenditure and Carrier receipts, and listed in Table 5 bottom row. Column (1) of Table 5A shows that ten sectors cover almost all of the 13,566 jobs of Direct impact. The three largest impacts occur for Hotels and Restaurants (55) with 4,238 jobs, Land Transport (60) with 2,713 jobs, and Recreation (92) with 1,787 jobs.

**Table 5A: Sectoral Employment Impacts of Jordanian 2000 Tourist Expenditure and Carrier Receipts**

<b>Sector</b>	<b>Direct (Table 5 col. 2) (1)</b>	<b>Indirect (Table 5 col. 3) (2)</b>	<b>Indirect residue (Table 5 col.4) (3)</b>	<b>Total Dir.+Indir (1)+(2)+(3) (4)</b>
Agricultur (01)		181	97	278
Textiles (17)	151	23	12	186
Non-met m (26)	638	53	28	719
Fabric met (28)	231	49	26	306
Electricity (40)		175	93	268
Retail trade(52)	1,556	2	1	1,559
Hotels&res (55)	4,238	88	47	4,373
Land trans (60)	2,713	180	96	2,989
Air transpt (62)	435	51	27	513
Auxil trans (63)		538	287	825
Financ intr (65)		210	112	322
Other busi (74)		986	526	1,512
Education (80)	674	0	0	674
Health (85)	1,074	302	161	1,537
Recreation (92)	1,787	46	25	1,858
Rest	69	884	472	1,425
<b>Total</b>	<b>13,566</b>	<b>3,768</b>	<b>2,010</b>	<b>19,344</b>

Sources: column (1) is from Sheet 5 column R; column (2) is from Sheet 5 column AD.

Table 5A columns (2) and (3) cover the Indirect impacts of fifteen dominant sectors, column (3) entries being in proportion to those of column (2), by the totals proportion 2010/3768. It is of interest that column (2) Indirect impacts of significance occur for some five further sectors, the dominant impact being 986 jobs in Other Business Activities (74). Column (4) gives combined Direct + Indirect impacts, the five leading sectors being Hotels and Restaurants with 4,373 jobs, Land Transport (60) with 2,989 jobs, Recreation (92) with 1,858 jobs, Health (85) with 1,537 jobs, and Other Business Activities (74) with 1,512 jobs.

**ARAB**

Tables 6 and 6A treat direct and indirect impacts of Arab Tourist expenditure and Carrier receipts. Table 6 follows immediately below.

**Table 6: Arab Tourist and Carrier Direct and Indirect Impacts (JD million)**

Item	Table 4 Arab Column	From domestic outputs 1 <sup>st</sup> round (Sheet 5)	From Intermed. Purchas. 1 <sup>st</sup> round (Sheet 5)	Col (3) Intermed. 32.05 pro rata col (3) oth(54.59)	Summary Direct Impact (1) + (2)	Summary Indirect Impact (3) + (4)
	(1)	(2)	(3)	(4)	(5)	(6)
Gross Value Added		99.70	32.11	18.85	99.70	50.96
Product Taxes	25.60		1.39	0.82	25.60	2.21
Imports	7.41		21.09	12.38	7.41	33.47
Aggregate domestic output	186.34					
Intermediat costs =purchases		86.64	32.05		86.64	
<b>TOTAL</b>	<b>219.35</b>	<b>186.34</b>	<b>86.64</b>	<b>32.05</b>	<b>219.35</b>	
<b>GVA Details:</b>						
Taxes on Inputs		1.07	0.58	0.34	1.07	0.92
Employee Compensatn.		44.03	11.97	7.03	44.03	19.00
Capital Consumptio		21.50	5.52	3.24	21.50	8.76
Operating Surplus		33.10	14.04	8.24	33.10	22.28
<b>Other Items:</b>						
Income Tax		0.47	0.26	0.15	0.47	0.41
Profits Tax		2.08	1.09	0.64	2.08	1.73
Household Income for spending		60.08	19.28	11.32	60.08	30.60
<b>Govt. Income Total</b>					29.22	5.27
<b>GDP (GVA + Product Tax)</b>					125.30	53.17
<b>GDP + Imports</b>					132.71	86.64
<b>Employment (number)</b>		<b>22,017</b>	<b>6,019</b>	<b>3,534</b>	<b>22,017</b>	<b>9,553</b>

Table 6 column (5) summarises “Direct” impacts, as detailed in columns (1) and (2). The Arab year 2000 Tourist expenditure and Carrier receipts of 219.35 (in JD million units) has direct impacts comprising 99.70 of GVA, 25.60 of Product Taxes and 22,017 Employment jobs. This GVA includes 44.03 of Employee Compensation and 33.10 of Operating Surplus, out of which comes 60.08 of Household Income for spending.

Intermediate costs of Direct impacts are 86.64, having their own impacts shown in column (3), with remaining Intermediate worth 32.05. The latter is distributed in column (4) pro rata column (3) value 54.59 (GVA plus Product Taxes plus Imports), so as to give estimated impacts of this 32.05. The rest of column (4) is filled in by applying the same ratio 32.05/54.59 to column (3) entries.

Column (6) summarises “Indirect” impacts, as detailed in columns (3) and (4). We find 50.96 of GVA, 2.21 of Product Taxes, and 9,553 jobs. This GVA includes 19.00 of Employee Compensation and 22.28 of Operating Surplus, out of which comes 30.60 of Household Income for spending.

Towards the bottom of columns (5) and (6) we can find that the total Government Income impact is 34.49 units, made up of 29.22 Direct and 5.27 Indirect. Likewise, a total GDP (at Market Prices) impact of 178.47 units is comprised of 125.30 Direct and 53.17 Indirect. Adding on Imports to GDP gives 132.71 plus 86.64, which is 219.35 of combined impact, the same as the full Expenditure stimulus. This accords with correct usage of Input-Output modeling towards Direct plus Indirect impacts, for GDP at Market Prices plus Imports.

Table 6A following details the major sectoral contributions to Employment, as generated by Arab year 2000 Tourist expenditure and Carrier receipts, and listed in Table 6 bottom row. Column (1) of Table 6A shows that ten sectors cover almost all of the 22,017 jobs of Direct impact. The three largest impacts occur for Hotels and Restaurants (55) with 7,890 jobs, Health (85) with 5,781 jobs, and Land Transport (60) with 2,432 jobs.

**Table 6A: Sectoral Employment Impacts of Arab 2000 Tourist Expenditure and Carrier Receipts**

<b>Sector</b>	<b>Direct (Table 6 col. 2) (1)</b>	<b>Indirect (Table 6 col. 3) (2)</b>	<b>Indirect residue (Table 6 col.4) (3)</b>	<b>Total Dir.+Indir (1)+(2)+(3) (4)</b>
Agriculture (01)		319	187	506
Textiles (17)	123	30	18	171
Non-met m(26)	526	51	30	607
Fabric met(28)	193	51	30	274
Electricity (40)		289	170	459
Retail trade(52)	1,279	6	4	1,289
Hotels & Res. (55)	7,890	84	49	8,023
Land trans(60)	2,432	166	97	2,695
Air transport (62)	353	44	26	423
Auxil trans(63)		471	277	748
Finance inter(65)		203	119	322
Other business (74)		1,461	858	2,319
Education(80)	1,402	0	0	1,402
Health (85)	5,781	1,488	874	8,143
Recreation(92)	1,981	52	31	2,064
Rest	57	1,304	764	2,125
<b>Total</b>	<b>22,017</b>	<b>6,019</b>	<b>3,534</b>	<b>31,570</b>

Sources: column (1) is from Sheet 5 column R; column (2) is from Sheet 5 column AD.

Table 6A columns (2) and (3) cover the Indirect impacts of fifteen dominant sectors, column (3) entries being in proportion to those of column (2), by the totals proportion 3534/6019. It is of interest that column (2) Indirect impacts of significance occur for some five further sectors, the dominant impact of these being 1,461 jobs in Other Business Activities (74). Column (4) gives combined Direct + Indirect impacts, the four leading sectors being Health (85) with 8,143 jobs, Hotels and Restaurants (55) with 8,023 jobs, Land Transport (60) with 2,695 jobs, and Other Business Activities (74) with 2,319 jobs.

**FOREIGN**

Tables 7 and 7A treat direct and indirect impacts of Foreign Tourist expenditure and Carrier receipts. Table 7 follows immediately below.

**Table 7: Foreign Tourist and Carrier Direct and Indirect Impacts (JD million)**

Item	Table 4 Foreign Column  (1)	From domest outputs 1 <sup>st</sup> round (Sheet 5)  (2)	From Intermed. Purchas. 1 <sup>st</sup> round (Sheet 5)  (3)	Col (3) Intermed. 33.06 pro rata col (3) oth(66.84)  (4)	Summary Direct Impact (1) + (2)  (5)	Summary Indirect Impact (3) + (4)  (6)
Gross Value Added		116.90	32.38	16.02	116.90	48.40
Product Taxes	27.70		2.78	1.38	27.70	4.16
Imports	7.20		31.68	15.66	7.20	47.34
Aggregate domestic output	216.80					
Intermediate costs =purchases		99.90	33.06		99.90	
<b>Total</b>	<b>251.70</b>	<b>216.80</b>	<b>99.90</b>	<b>33.06</b>	<b>251.70</b>	
<b>GVA Details:</b>						
Taxes on Inputs		2.47	0.71	0.35	2.47	1.06
Employee Compensation		34.47	10.49	5.19	34.47	15.68
Capital Consumption		20.93	5.22	2.58	20.93	7.80
Operating Surplus		59.03	15.96	7.90	59.03	23.86
<b>Other Items:</b>						
Income Tax		0.67	0.37	0.18	0.67	0.55
Profits Tax		4.13	1.23	0.61	4.13	1.84
Household Income for spending		71.45	19.49	9.64	71.45	29.13
<b>Govt. Income Total</b>					34.97	7.61
<b>GDP (GVA + Product Tax)</b>					144.60	52.56
<b>GDP + Imports</b>					151.80	99.90
<b>Employment (number)</b>		<b>23,891</b>	<b>5,507</b>	<b>2,724</b>	<b>23,891</b>	<b>8,231</b>

Table 7 column (5) summarises “Direct” impacts, as detailed in columns (1) and (2). The Foreign year 2000 Tourist expenditure and Carrier receipts of 251.70 (in JD million units) has direct impacts comprising 116.90 of GVA, 27.70 of Product Taxes and 23,891 Employment jobs. This GVA includes 34.47 of Employee Compensation and 59.03 of Operating Surplus, out of which comes 71.45 of Household Income for spending.

Intermediate costs of Direct impacts are 99.90, having their own impacts shown in column (3), with remaining Intermediate worth 33.06. The latter is distributed in column (4) pro rata column (3) value 66.84 (GVA plus Product Taxes plus Imports), so as to give estimated impacts of this 33.06. The rest of column (4) is filled in by applying the same ratio 33.06/66.84 to column (3) entries.

Column (6) summarises “Indirect” impacts, as detailed in columns (3) and (4). We find 48.40 of GVA, 4.16 of Product Taxes, and 8,231 jobs. This GVA includes 15.68 of Employee Compensation and 23.86 of Operating Surplus, out of which comes 29.13 of Household Income for spending.

Towards the bottom of columns (5) and (6) we can find that the total Government Income impact is 42.58 units, made up of 34.97 Direct and 7.61 Indirect. Likewise, a total GDP (at Market Prices) impact of 197.16 units is comprised of 146.60 Direct and 52.56 Indirect. Adding on Imports to GDP gives 151.80 plus 99.90, which is 251.70 of combined impact, the same as the full Expenditure stimulus. This accords with correct usage of Input-Output modelling towards Direct plus Indirect impacts, for GDP at Market Prices plus Imports.

Table 7A following details the major sectoral contributions to Employment, as generated by Foreign year 2000 Tourist expenditure and Carrier receipts, and listed in Table 7 bottom row. Column (1) of Table 7A shows that ten sectors cover almost all of the 23,891 jobs of Direct impact. The three largest impacts occur for Land Transport (60) with 12,972 jobs, Hotels and Restaurants (55) with 6,011 jobs, and Recreation (92) with 1,533 jobs.

**Table 7A: Sectoral Employment Impacts of Foreign 2000 Tourist Expenditure and Carrier Receipts**

<b>Sector</b>	<b>Direct (Table 7 col. 2) (1)</b>	<b>Indirect (Table 7 col. 3) (2)</b>	<b>Indirect residue (Table 7 col.4) (3)</b>	<b>Total Dir.+Indir (1)+(2)+(3) (4)</b>
Agricultur (01)		245	121	366
Textiles (17)	110	24	12	146
Non-met m(26)	474	46	23	543
Fabric met(28)	173	41	20	234
Electricity (40)		292	144	436
Retail trade(52)	1,207	1	0	1,208
Hotels&res(55)	6,011	138	68	6,217
Land trans(60)	12,972	521	258	13,751
Air transpt (62)	864	98	48	1,010
Auxil trans(63)		1,130	559	1,689
Financ inter(65)		394	195	589
Other busi (74)		1,136	562	1,698
Education(80)	321	0	0	321
Health (85)	161	82	41	284
Recreation(92)	1,533	39	19	1,591
Rest	65	1,320	654	2,039
<b>Total</b>	<b>23,891</b>	<b>5,507</b>	<b>2,724</b>	<b>32,122</b>

Sources: column (1) is from Sheet 5 column R; column (2) is from Sheet 5 column AD.

Table 7A columns (2) and (3) cover the Indirect impacts of fifteen dominant sectors, column (3) entries being in proportion to those of column (2), by the totals proportion 2724/5507. It is of interest that column (2) Indirect impacts of significance occur for some five further sectors, the dominant impact of these being 1,136 jobs in Other Business Activities (74). Column (4) gives combined Direct + Indirect impacts, the four leading sectors being Land Transport (60) with 13,751 jobs, Hotels and Restaurants (55) with 6,217 jobs, Other Business Activities (74) with 1,698 jobs, and Auxiliary Transport (63) with 1,689 jobs.

## INDUCED IMPACTS (year 2000)

We now derive “Induced” impacts for the three nationality types, by applying Household spending multipliers (direct plus indirect) to the Household Income (for spending) estimated as a direct plus indirect impact in Tables 5 to 7 above. We take the multipliers from Tables 7 and 7A of Appendix C. Table 8 following shows Induced Impact calculations.

**Table 8: Jordan 2000 Tourism Induced Impacts via spending Household Income Generated directly and indirectly**

Item	Household spending of JD100m (1)	Jordanian Tourists and carrier rcpts Pro rata (1) (2)	Arab Tourists and carrier Pro rata(1) (3)	Foreign Tourists and carrier Pro rata(1) (4)	TOTAL year 2000 Tour. & Ca (2) to (4) (5)
Hold Income stimulus	100	58.86	90.68	100.58	250.12
<b>Impacts:</b>					
Gross Value Add(GVA)	58.04	34.16	52.63	58.38	145.17
Product taxes	9.72	5.72	8.81	9.78	24.31
Imports	32.24	18.98	29.24	32.42	80.64
<b>GVA details:</b>					
Taxes on inputs	1.30	0.77	1.18	1.31	3.26
Employment compensate	17.00	10.01	15.42	17.10	42.53
Capital consumption	6.50	3.83	5.89	6.54	16.26
Operating surplus	33.23	19.55	30.14	33.43	83.12
<b>Other Items:</b>					
Income tax	0.30	0.18	0.27	0.30	0.75
Profits tax	1.48	0.87	1.34	1.49	3.70
Govt. Income total	12.80	7.53	11.61	12.87	32.01
GDP (GVA+Prod.Tax)	67.76	39.88	61.44	68.16	169.48
<b>Employment (number)</b>					
<b>Total</b>	<b>10,042</b>	<b>5,911</b>	<b>9,106</b>	<b>10,100</b>	<b>25,117</b>
Agriculture (01)	1,187	699	1,076	1,194	2,969
Food and beverage (15)	979	576	888	985	2,449
Furniture etc. (36)	155	91	141	156	388
Motor sales (50)	444	261	403	447	1,111
Wholesale (51)	585	344	530	588	1,462
Retail (52)	1,214	715	1,101	1,221	3,037
Hotels & restaurant (55)	114	67	103	115	285
Land transport (60)	403	237	365	405	1,007
Air transport (62)	7	4	6	7	17
Post & telegraph (64)	543	320	492	546	1,358
Real estate (70)	368	217	334	370	921
Other business ser (74)	835	491	757	840	2,088
Education (80)	1,025	603	929	1,031	2,563
Health (85)	331	195	300	333	828
Recreation (92)	20	12	18	20	50
Other services (93)	214	126	194	215	535
Rest	1,618	953	1,469	1,627	4,049

Table 8 column (5) carries the combined Induced impacts for all three nationality types, derived from JD 250.12 million of Household Income generated. This spending stimulus produces impacts comprising three components making up its own value: 145.2 (in JD million units) of GVA, 24.3 of Product Taxes, and 80.6 of Imports. GVA components include 42.5 of Employee Compensation and 83.1 of Operating Surplus. To avoid possibility of double counting, we do not reckon Household Income at this point. Total Government Income amounts to 32.0 and Gross Domestic Product (GDP) is worth 169.5.

Regarding Employment, some 25,100 jobs are the full Induced impact. The five largest components are: 2,969 in Agriculture (01); 2,449 in Food and Beverages (15); 3,037 in Retail Trade (52); 2,088 in Other Business Services (74); and 2,563 in Education (80). A few small entries are also listed (e.g. 50 in Recreation (92)), towards full coverage of some sectors in Table 9 following, which treats total impacts.

### **TOTAL IMPACTS**

It is in order at this stage to bring all impacts together and compare them with matching year 2000 State totals. This is accomplished in Table 9 following. The first three columns draw on data from Tables 5 to 8 and 5A to 8A, these being the direct plus indirect impacts of the three national types. We may recap here that (in JD million units) Jordanian Tourist spending plus Carrier receipts (for year 2000) was worth 151.40, Arab was worth 219.35, and Foreign was worth 251.70, making together 622.45 as combined stimulus for impacts. This amount comprises 24.8 percent of the 2,507.0 units of year 2000 Exports of Goods and Services (Table 22.1). Table 9 column (4) carries total Induced impacts as given in Table 8. Column (5) shows total impacts, the sum of entries in columns (1) to (4). We may here be reminded that “Indirect” impacts are less precise than Direct impacts, because the Indirect are based on assumed Irish (1998) input cost structures, not on actual Jordanian statistics.

Table 9 column (6) State totals draw on two published sources: Table 22.1 (page 223) of **Statistical Yearbook 2001** and **Table (5) Central Government Domestic Revenues** published among other material by the Ministry of Finance. The Employment data in the lower portion of column (6) are taken from Sheet 1 column X of Appendix E. A comment on these figures is advisable.

**Table 9: Total Tourist plus Carrier year 2000 Impacts compared with Jordan State Totals (in JD million and numbers Employed)**

Item	Jordania Tour+Ca Dir+Indir (Tab 5) (1)	Arab Tour+Ca Dir+Indir (Tab 6) (2)	Foreign Tour+Ca Dir+Indir (Tab 7) (3)	Total Induced (Tab 8) (4)	TOTAL IMPACT (1) to (4) (5)	State year 2000 Totals (6)	Percent Impact Shares (5)/(6) (7)
GVA	96.59	150.66	165.30	145.17	557.72		
Product Taxes	20.30	27.81	31.86	24.31	104.28		
Imports	34.51	40.88	54.54	80.64	210.57	4,109.5	5.12
<b>GVA details:</b>							
Taxes on inputs	1.48	1.99	3.53	3.26	10.26		
Employee compens	34.86	63.03	50.15	42.53	190.57	2,347.2	8.12
Cap.consn	17.24	30.26	28.73	16.26	92.49	669.2	13.82
Oper.surpl	43.01	55.38	82.89	83.12	264.40	2,082.1	12.70
<b>Other items:</b>							
Income tax	0.72	0.88	1.22	0.75	3.57	63.7	5.60
Profits tax	3.23	3.81	5.97	3.70	16.71	97.3	17.17
Govt. Income	25.73	34.49	42.58	32.02	134.82	1,610.1	8.37
GDP	116.89	178.47	197.16	169.48	662.00	6,002.4	11.03
<b>Employment</b>							
<b>Total</b>	<b>19,344</b>	<b>31,570</b>	<b>32,122</b>	<b>25,117</b>	<b>108,153</b>	<b>1,049,849</b>	<b>10.30</b>
Agric (01)	278	506	366	2,969	4,119	59,450	6.93
Retail (52)	1,559	1,289	1,208	3,037	7,093	62,000	11.44
Hotel(55)	4,373	8,023	6,217	285	18,898	31,000	60.96
Land tr(60)	2,989	2,695	13,751	1,007	20,442	70,000	29.20
Air tr (62)	513	423	1,010	17	1,963	4,215	46.57
Auxil trans (63)	825	748	1,689	270	3,532	25,000	14.13
Other busin activit(74)	1,512	2,319	1,698	2,088	7,617	9,500	80.18
Educ (80)	674	1,402	321	2,563	4,960	30,000	16.53
Health(85)	1,537	8,143	284	828	10,792	15,500	69.63
Recreat(92)	1,858	2,064	1,591	50	5,563	6,600	84.29
Rest	3,226	3,958	3,987	12,003	23,174	736,584	3.15

Briefly, no information was available on full-time versus part-time Employment. Advice received via Ms Goussous was to apply (from separate data) average annual (assumed) full-time salary rates to Employee Compensation (Sheet 1 column G), and thus obtain estimated full-time equivalent employment. This was done, giving (minimum) numbers as shown in column V. However, some sectors also pay employees out of Operating Surplus (OS), so a second (maximum) full-time equivalent number was obtained, as shown in column W, based on all OS also used thus.

The compromise numbers (as adjudged by Henry) are entered in column X, and imply nil OS or some OS being used to pay employees, depending on which sector. These estimates are uncertain, but their total is some 1,050,000, fairly close to the total 975,256 given in Jordan file “employment by econo activit.xls”. They may thus be considered “reasonable” estimates.

Table 9 column (7) shows derived Impact percentage shares, where the figures permit. A few quotations will suffice here. The GDP (at Market Prices) impact JD 662.0 million is 11 percent of the State total, with Government Income JD 134.8 million taking 8.4 percent of the total.

Regarding Employment, an estimated 108,153 full-time equivalent jobs total impact is about 10 percent of total employment. As might be expected, the sectors used by Tourists show large percentages: Hotels and restaurants (55) have 61 percent of output sold to Tourists, Land transport (60) shows 29 percent, Air transport 47 percent, with Recreation (92) shows 84 percent. Other business services (74) showing 80 percent and Health (85) showing 70 percent may be unrealistically large, but cannot be checked on further by the available information.

Tourism “Multipliers” may also be derived, showing average impacts per JD million Tourist expenditure. For total impacts derived from total year 2000 Tourist plus Carrier receipts worth 622.45 (JD million), a few multipliers will illustrate: GDP has 1.0635 given by  $662.00/622.45$ , Government Income has 0.21660 given by  $134.82/622.45$ , and Employment has 173.75 given by  $108153/622.45$ . Similar multipliers can be derived for each of the three nationalities, and for each of Direct, or Indirect, or Induced impacts.

**APPENDIX C**

**JORDAN HOUSEHOLD 2002 EXPENDITURE PATTERNS TOWARDS  
INDUCED IMPACTS**

### Introduction

This Appendix describes how Jordan Household expenditure special patterns are derived from a Household Expenditure Survey yielding a 12-month estimated total and details. These special patterns are suitable for deriving “Induced” impacts of Tourist year-2000 expenditure in Jordan, through spending of the Household Income thus generated.

The main data source for 12-month expenditure is the detailed Table 5.1 (pp. 280-305) of **Household Expenditure and Income Survey 2002/2003**. The “Kingdom” column of this table gives Jordan national estimates representing a year between March 2002 and February 2003. The estimated grand total expenditure is JD 5001.30 million, only some 3.0 percent greater than the actual year-2000 Private Final Consumption Expenditure of JD 4,856.1 million, per Table 22.1 (p. 223) of **Statistical Yearbook 2001**.

The discussion that follows first lists main item-groups and their values from Table 5.1 of the Survey. Each such item-group is then broken down into sub-items with values, each of which is identified (as far as possible) with commodity flows (outputs plus imports) of the sixty (NACE Rev.1 A60) usual 2-digit economic activities 01) Agriculture to 99) Extra-territorial organizations. All sub-items are then aggregated into the sixty (or less) activity amounts at purchasers’ prices. These values are then further broken down between trade margins (where relevant), product taxes, imports c.i.f., and domestic outputs at basic prices.

These imports plus domestic outputs (combined values at basic prices) may be compared with available supplies of year 2000, as roughly estimated on Sheet 1 of Appendix E. However, these latter estimates of available supplies are not precise, given that detailed Jordan 2000 Intermediate costs are not available and Irish input cost structures have been applied for year 2000. Accordingly, the detailed sectoral outcome derived from the Household Expenditure Survey will be used, as described elsewhere in this report, to estimate Induced impacts. Available supplies, in this context, cover gross fixed capital formation and inventory changes and Government current purchases as well as expenditure of households and tourists (from abroad), during year 2000. So we would expect available supplies to exceed household demand, if both sets of estimates were precise, or to be included in an input-output table.

**Main Item-Groups and Values (Table 1)**

Little verbal discussion is needed for Table 1 following, given the outline above in the Introduction. The Survey total JD 5,001.30 million is broken down among major items.

**Table 1: Survey main item-groups descriptions and values (JD million)**

<b>Item description</b>	<b>Value</b>	<b>Item description</b>	<b>Value</b>
<b>Food</b>	<b>1,756.75</b>	OTHER G& S detail:	
<b>Beverages and alcohol</b>	<b>54.31</b>	Clothing and footwear	242.36
<b>Tobacco products</b>	<b>175.66</b>	Housing and related exp.	846.48
<b>Other goods &amp; services</b>	<b>3,014.58</b>	Fuel and lighting	214.68
<b>GRAND TOTAL</b>	<b>5,001.30</b>	Furniture and furnishing	111.90
FOOD detail:		Household appliances	52.58
Cereals etc.	238.14	House utensils	21.49
Meats and poultry	453.01	House cleaning materials	73.18
Fish	30.39	Transport & communicat	659.07
Dairy prod. & eggs	226.25	Education	308.33
Oils & fats	134.00	Medical care	138.21
Fruits	122.05	Personal care	167.14
Vegetables	176.62	Culture, recreation&sport	99.19
Dry & canned legumes	19.71	Other expenses	79.97
Spices etc.	38.61	<b>TOTAL OTHER G&amp;S</b>	<b>3,014.58</b>
Nuts	28.87	CLOTHING&FW detail:	
Sugar/confect/honey	118.91	Men’s clothing	56.98
Tea, coffee, cacao	71.63	Women’s clothing	77.53
Other food items	98.56	Children’s clothing	54.11
<b>TOTAL FOOD</b>	<b>1,756.75</b>	Fabric (cloth)	3.71
BEV & ALCO detail:		Costs of tailoring	2.66
Beverages (non-alcohol)	53.10	Footwear	47.37
Alcoholic beverages	1.21	<b>TOTAL CLOTH.&amp;FW</b>	<b>242.36</b>
<b>TOTAL BEV &amp; ALCO</b>	<b>54.31</b>		

**Detailed Allocation to Economic Sector Sources (Table 2)**

As the detailed allocation is rather long, Table 2 following is broken into parts. Each item-group listed in Table 1 is broken down into sectoral components, as suggested by Table 5.1 details. Values stated to be explicit imports (in Table 5.1) are listed separately in Table 2, so that they can be identified for Table 3 etc.

**Table 2: Household Expenditure Item-Group Values broken down by sector source  
:Part 1**

Item-group (1)	Value JD million (2)	Sector breakdown (3)	Value JD mill (4)	Comments (5)
Cereals	<b>238.14</b>	01)Agriculture 15) Food Total Cereals	87.48 150.66 <b>238.14</b>	Grains Rest of Cereals
Meats & poultry	<b>453.01</b>	01)Agric 15)Food 15)Food <b>Total Meats &amp; P.</b>	150.61 69.72 232.68 <b>453.01</b>	Live chickens Imported meat Rest of Meat etc.
Fish	<b>30.39</b>	05) Fishing 15) Food Total Fish	4.12 26.27 <b>30.39</b>	Fresh fish Rest of Fish
Dairy prods & eggs	<b>226.25</b>	01) Agric 15) Food Total Dairy P & E	38.75 187.50 <b>226.25</b>	Eggs Rest of Dairy P etc
Oils & fats	<b>134.00</b>	15) Food 15) Food Total Oils & fats	1.00 133.00 <b>134.00</b>	Imported olive oil Rest
Fruits	<b>122.05</b>	01) Agric 15) Food 01) Agric Total Fruits	6.90 0.63 114.52 <b>122.05</b>	Imported ap/ba/gr Canned/dried Rest
Vegetables	<b>176.62</b>	15) Food 01)Agric Total Vegetables	0.87 175.75 <b>176.62</b>	Canned/dried/froz Rest
Dry & canned legu	<b>19.71</b>	<b>15) Food</b> <b>01) Agric</b> Total Dry etc.	8.02 11.69 <b>19.71</b>	Canned Rest
Spices & food add	<b>38.61</b>	<b>15) Food</b> Total Spices etc.	38.61 <b>38.61</b>	All
Nuts	<b>28.87</b>	<b>01) Agric</b> Total Nuts	28.87 <b>28.87</b>	All

Table 2 : Part 2

Item-group (1)	Value JD million (2)	Sector breakdown (3)	Value JD mill (4)	Comments (5)
Sugar/confect/honey	<b>118.91</b>	01) Agriculture 01) Agric <b>15 Food</b> <b>Total Sugar etc.</b>	0.73 3.35 114.83 <b>118.91</b>	Imported honey Local honey Rest
Tea/coffee/cacao	<b>71.63</b>	01) Agric 15) Food Total Tea etc.	5.12 66.51 <b>71.63</b>	Coffee beans/caca Rest
Other Food	<b>98.56</b>	15) Food Total Other Food	98.56 <b>98.56</b>	All
<b>Beverages (non-alc)</b>	<b>53.10</b>	<b>15) Food &amp;beverag</b> <b>Total Bever (n.al)</b>	53.10 <b>53.10</b>	All
Alcoholic beverages	<b>1.21</b>	15) Food &bever Total Alcohol bev.	1.21 <b>1.21</b>	All
Tobacco products	<b>175.66</b>	16) Tobacco prods. Total Tobacco pro	175.66 <b>175.66</b>	All
Men's clothing	<b>56.98</b>	<b>18) Wearing appar</b> <b>Total Men's cloth.</b>	56.98 <b>56.98</b>	All
Women's clothing	<b>77.53</b>	18) Wearing appar Total Women's cl	77.53 <b>77.53</b>	All
Children's clothing	<b>54.11</b>	<b>18) Wearing appar</b> Total Children's c	54.11 <b>54.11</b>	All
<b>Fabric (cloth)</b>	<b>3.71</b>	17) Textiles Total Fabric(cloth)	3.71 <b>3.71</b>	All
Cost of tailoring	<b>2.66</b>	<b>18) Wearing appar</b> Total Cost of tail.	2.66 <b>2.66</b>	All
Footwear	<b>47.37</b>	<b>19) Leath/Footwear</b> Total Footwear	47.37 <b>47.37</b>	All

Table 2: Part 3

Item-group (1)	Value JD million (2)	Sector breakdown (3)	Value JD mill (4)	Comments (5)
Housing & related e	<b>846.48</b>	70) Real estate 45) Construction <b>41) Water supply</b> 75) Public admin. 74)Other busin act. <b>Total Hous etc.</b>	769.21 1.87 36.29 18.07 21.04 <b>846.48</b>	Rent incl imputed Repairs Water supply Garbage etc.90)na Rest(other expens)
Fuel & lighting	<b>214.68</b>	<b>40) Electricity</b> 71)Renting machin <b>23) Petrol refining</b> <b>31) Electric machin</b> <b>Total fuel etc.</b>	105.34 8.95 99.68 0.71 <b>214.68</b>	Electricity TV fee Mainly petrol fuels Dry batteries etc.
Furniture &furnish	<b>111.90</b>	36) Furniture <b>17) Textiles</b> 26)Non-met miner <b>92)Recreational</b> Total Furniture et	72.45 36.27 2.10 1.08 <b>111.90</b>	Rest Carpets, bed linen Flower pots/antiqu Paintings/photos
Household applianc	<b>52.58</b>	29) Machinery nec Total Hhold appli	52.58 <b>52.58</b>	All
Household utensils	<b>21.49</b>	<b>26) Non-met miner</b> <b>28) Fabric metal</b> <b>25) Rubber &amp; plast</b> 21) Paper Total Hhold utens	12.38 7.98 0.91 0.22 <b>21.49</b>	Crockery etc. Rest Bags etc Bags
House clean mater.	<b>73.18</b>	<b>36) Furniture etc.</b> <b>24) Chemicals</b> Total house cle ma	3.55 69.63 <b>73.18</b>	Brooms/sponges Rest

Table 2: Part 4

Item-group (1)	Value JD million (2)	Sector breakdown (3)	Value JD mill (4)	Comments (5)
Transport & comm	<b>659.07</b>	64) Post & telecom 50) Motor rep/main <b>63) Auxil transpt</b> 34) Motor vehicle 66) Insurance 80) Education <b>62) Air transport</b> 61) Water transport <b>23) Petrol refining</b> <b>60) Land transport</b> <b>Total transp&amp;com</b>	221.17 95.33 1.08 83.41 12.75 1.37 14.76 0.40 128.46 100.34 <b>659.07</b>	Phone etc. Oil/repair/wash/sol “other tr/c costs” “Valu of car/mc” Insurance Driving lessons Air transport Sea transport Gasolene Rest
Education	<b>308.33</b>	21) Paper products <b>22) Publishing</b> 30) Office machin <b>17) Textiles</b> <b>Imports of services</b> 80) Education Total Education	6.50 7.61 0.12 3.23 12.90 277.97 <b>308.33</b>	Draw/writ mater. Textbook costs Calculators etc. School bags Univ. tuit outs Jor Rest
Medical Care	<b>138.21</b>	<b>Imports of services</b> <b>24) Chemicals</b> <b>85) Health</b> Total Medicl Care	0.12 52.06 86.03 <b>138.21</b>	Treatmt outsid Jor Medicat/med prod Rest
Personal Care	<b>167.14</b>	<b>36)Furnit/jewellery</b> <b>33)Precis/optical</b> <b>21)Paper &amp; prods.</b> <b>19)Leather etc.</b> <b>93)Other services</b> <b>29)Machinery nec</b> <b>93)Other services</b> <b>24)Chemicals</b> Total Person.Care	35.69 2.49 28.34 1.84 1.88 5.30 32.13 59.47 <b>167.14</b>	Jewell/toothbrushes Handwatch/sunglass Sanitary napkins Handbags Laundry etc. Shavers/hairdryers Haircuts etc. Rest

Table 2: Part 5

Item-group (1)	Value JD million (2)	Sector breakdown (3)	Value JD mill (4)	Comments (5)		
Culture, recr, sport	<b>99.19</b>	22) Publishing	3.52	Newspapers/books		
		Imports of services	23.27	Tourism outs. Jord		
		<b>Imports of services</b>	21.21	Pilgrimage		
		55) Hotels/restaur	2.73	Tour in Jord(part)		
		60) Land transport	2.70	Tour in Jord(rest)		
		60) Land transport	1.35	School trips		
		<b>30) Office machin</b>	13.75	Pers. Computers		
		32)Radio/TV equip	12.55	TV etc. sets		
		<b>52)Retail/repairs</b>	0.60	Mainten of devices		
		<b>35)Other transp equ</b>	0.87	Bicycles etc.		
		01)Agric/horticult	1.73	Roses etc.		
		32)Radio/TV equip	6.51	Satellite dish etc.		
		<b>36)Furniture/toys</b>	3.86	Toys/sports goods		
		92)Recreation/sport	4.54	Rest		
				<b>Total Culture etc.</b>	<b>99.19</b>	
Other Expenses	<b>79.97</b>	<b>55)Hotels &amp; restau</b>	33.13	Wedd/memor/hotel		
		24) Chemicals	0.80	Lighters/matches		
		<b>95)House.empl.per</b>	10.89	Resid. Housekeep		
		<b>93)Other services</b>	5.72	Non-resid employe		
		<b>91)Membersh orga</b>	2.38	Union contribs.		
		<b>Imports of services</b>	0.18	Expend outsi. Jord		
		<b>Govt. taxes</b>	13.77	Car reg/ tariffs		
		<b>75)Public admin</b>	3.49	Passports etc.		
		<b>65) Financial serv</b>	0.54	Bank fees		
		<b>70) Real estate</b>	3.35	Property transacts.		
		<b>74)Other busin act.</b>	5.72	Rest,includg legal		
				<b>Total Other Exps</b>	<b>79.97</b>	

It is now necessary to summarise the above estimated allocations into a 60-sector result. Table 3 following shows this outcome, with additional rows for Taxes items and Imported Services.

Table 3: Summary of Table 2 Expenditure, by sector source

Sector source	Value JD million	Explicit import share JD mill	Sector source (continued)	Value JD million	Explicit import share JD mill
01)Agriculture	625.50	7.63	52)Retail trade/rep	0.60	
05) Fishing	4.12		55)Hotels & restau	35.86	
15)Food & bever	1,183.17	70.72	60)Land transport	104.39	
16)Tobacco prods	175.66		61)Water transport	0.40	
17)Textiles	43.21		62)Air transport	14.76	
18)Wearing appar	191.28		63)Auxiliary transp	1.08	
19)Leath & footwr	49.21		64)Post & telecom	221.17	
21) Paper	35.06		65)Financ intermed	0.54	
22)Publishing	11.13		66)Insurance	12.75	
23)Petrol refining	228.14		70)Real estate	772.56	
24)Chemicals	181.96		71)Renting machin	8.95	
25)Rubber & plast	0.91		74)Other busin serv	26.76	
26)Non-metall min	14.48		75)Public administ	21.56	
28)Fabricat metals	7.98		80)Education	279.34	
29)Machinery nec	57.88		85)Health & s.w.	86.03	
30)Office machin	13.87		91)Membersh orgs	2.38	
31)Electrical mach	0.71		92)Recreation/sport	5.62	
32)Radio, TV etc.	19.06		93)Other services	39.73	
33)Medic, précis	2.49		95)Hholds wth emp	10.89	
34)Motor vehicles	83.41				
35)Other trans equi	0.87		Imports of services	57.68	57.68
36)Furniture etc.	115.55		Government taxes	13.77	
40)Electricity&gas	105.34				
41)Water supply	36.29		<b>SUBTOTAL (2)</b>	<b>1,716.82</b>	<b>57.68</b>
45)Construction	1.87		<b>SUBTOTAL (1)</b>	<b>3,284.48</b>	<b>78.35</b>
50)M.V sales/rep	95.33		<b>GRAND TOTAL</b>	<b>5,001.30</b>	<b>136.03</b>
<b>SUBTOTAL (1)</b>	<b>3,284.48</b>	<b>78.35</b>			

**Estimation of Trade Margins and Sales Taxes**

Table 4 following shows estimated distribution of Trade Margin and Sales Tax across sectors. Sectors 50) to 52) for year 2000 show some JD 650 million as total combined Trade Margin, much of which (both wholesale and retail) is carried by Household purchases. Table 4 shows a total JD 567.82 million distributed (including vehicle repair by sector 50), which is an acceptable aggregate estimate of the Household share. As regards Sales Tax, **Table (5): Central Government Domestic Revenues** shows year 2000 total value JD 464.5 million as General Sales Tax, of which Goods yield JD 422.0m and Services JD 42.5m. Of these totals, Table 4 allocates to Households some five-sixths, namely JD 350m on Goods and JD 35m on Services. More comment follows, below Table 4.

**Table 4: Trade Margin and Sales Tax Estimates for 2000 Household Expenditure  
Part 1: GOODS**

Sector source	Table 3 expend JDm (1)	Trade Marg % (2)	TradMar JDm (1)*(2) (3)	Residue (1)less(3) JDm (4)	SalesTax 1 <sup>st</sup> esti JDm (5)	SalesTax Rescaled JDm (6)	Residu (4)less(6) JDm (7)
01)Agricul	625.50	16.67	104.25	521.25	20.85	26.00	495.25
05) Fishin	4.12	17.36	0.72	3.40	0.14	0.17	3.23
15)Food & be	1,183.17	17.36	205.34	977.83	67.29	78.91	898.92
16)Tobacco	175.66	13.04	22.91	152.75	50.87	63.42	89.33
17)Textiles	43.21	33.33	14.40	28.81	4.61	5.75	23.06
18)Wear app	191.28	33.33	63.76	127.52	20.40	25.43	102.09
19)Leath&fw	49.21	33.33	16.40	32.81	5.25	6.55	26.26
21) Paper	35.06	28.06	9.84	25.22	4.04	5.04	20.18
22)Publish	11.13	28.06	3.12	8.01	0.0	0.0	8.01
23)Petrol	228.14	9.09	20.74	207.40	33.18	41.37	166.03
24)Chemic	181.96	20.00	36.39	145.57	23.29	29.04	116.53
25)Rub&pla	0.91	16.67	0.15	0.76	0.12	0.15	0.61
26)Non-metal	14.48	16.67	2.41	12.07	1.93	2.41	9.66
28)Fabric met	7.98	18.70	1.49	6.49	1.04	1.30	5.19
29)Mach nec	57.88	20.00	11.58	46.30	7.41	9.24	37.06
30)Office ma	13.87	16.67	2.31	11.56	1.85	2.31	9.25
31)Electr mac	0.71	15.97	0.11	0.60	0.10	0.12	0.48
32)Radio,TV	19.06	15.97	3.04	16.02	2.56	3.19	12.83
33)Medic,prec	2.49	24.24	0.60	1.89	0.30	0.37	1.52
34)Motor veh	83.41	24.81	20.70	62.71	10.03	12.51	50.20
35)Other trans	0.87	24.81	0.22	0.65	0.10	0.12	0.53
36)Furnit etc.	115.55	23.66	27.34	88.21	14.11	17.59	70.62
40)Elect&gas	105.34			105.34	0.00	0.00	105.34
41)Water sup	36.29			36.29	0.00	0.00	36.29
45)Construc	1.87			1.87	0.00	0.00	1.87
50)M.V sal/re	95.33			95.33	15.25	19.01	76.32
<b>Subtotal (1)</b>	<b>3,284.48</b>		<b>567.82</b>	<b>2,716.66</b>	<b>280.72</b>	<b>350.00</b>	<b>2,366.66</b>

Footnote: Column (2) trade margin percentages are based on those of column V of Sheet 1 Appendix E

Table 4: Part 2: SERVICES

Sector source	Table 3 expend JDm (1)	Trade Marg % (2)	TradMar JDm (3)	Residue (1)less(3) JDm (4)	Salestax 1 <sup>st</sup> esti JDm (5)	Salestax Rescaled JDm (6)	Residu (4)less(6) JDm (7)
52)Retail trade/rep	0.60			0.60			0.60
55)Hotels & restau	35.86			35.86		2.86	33.00
60)Land transport	104.39			104.39		8.35	96.04
61)Water transport	0.40			0.40		0.05	0.35
62)Air transport	14.76			14.76		1.18	13.58
63)Auxiliary transp	1.08			1.08		0.09	0.99
64)Post & telecom	221.17			221.17		15.98	205.19
65)Financ intermed	0.54			0.54			0.54
66)Insurance	12.75			12.75			12.75
70)Real estate	772.56			772.56			772.56
71)Renting machin	8.95			8.95		0.72	8.23
74)Other busin serv	26.76			26.76		2.14	24.62
75)Public administ	21.56			21.56			21.56
80)Education	279.34			279.34			279.34
85)Health & s.w.	86.03			86.03			86.03
91)Membersh orgs	2.38			2.38			2.38
92)Recreation/sport	5.62			5.62		0.45	5.17
93)Other services	39.73			39.73		3.18	36.55
95)Hholds wth emp	10.89			10.89			10.89
Imports of services	57.68			57.68			57.68
Government taxes	13.77			13.77			13.77
<b>SUBTOTAL (2)</b>	<b>1,716.82</b>			<b>1,716.82</b>		<b>35.00</b>	<b>1,681.82</b>
<b>SUBTOTAL (1)</b>	<b>3,284.48</b>		<b>567.82</b>	<b>2,716.66</b>	<b>280.72</b>	<b>350.00</b>	<b>2,366.66</b>
<b>GRAND TOTAL</b>	<b>5,001.30</b>		<b>567.82</b>	<b>4,433.48</b>		<b>385.00</b>	<b>4,048.48</b>

The aggregate trade margin JD 567.82 million will be allocated to sectors 50) to 52) in the final summary below. The JD 95.33m paid to sector 50) Motor trading in Part 1 above is for repairs of vehicles and other services, not a trade margin as such. The column (7) residue of Part 1 includes both Imports and Import Duties, as well as domestic outputs. Their separation will be estimated next, in what follows below. The column (7) residue of Part 2 is assumed to comprise outputs of domestic sectors, without any Import components.

Regarding Sales Taxes, the information provided on files “advisory guide.doc” and “sales tax schedules.doc” by the Jordanian tax experts was interpreted by Henry to give the following percentages of relevance for Household expenditure. Zero tax applies to a small range of foodstuffs and to printed matter as well as to some Services. A 4 percent rate applies to Agricultural produce and Food manufactures. A 16 percent rate applies to many other goods and to some Services. There is an extra 13 percent on Tobacco and Alcohol products.

The method used in Table 4 has been to make a first estimate of Tax on Goods (defined by the list of Part 1), given the stated rates, and then uniformly scale up these first estimates so that their aggregate fits the chosen total JD 350 million. For Services (defined by the list of Part 2), an approximate 8 percent rate applied to likely items gives the required aggregate JD 35 million.

**Imports and Import Duty Shares of Residues (Table 5)**

The residual amounts in column (7) of Table 4 Part 1 have three components in general: 1) domestic outputs at basic prices; 2) merchandise imports cif; 3) customs duties on these imports. A breakdown is required, by using percentages taken from Sheet 1 of Appendix E, in particular columns AA-AC rows 105-133. Table 5 following shows calculation of these estimates.

**Table 5: Breakdown of Table 4 column (7) merchandise rows into 3 components**

Sector source	Table 4 col (7) JDm (1)	Import Share % (2)	Customs Duty share % (3)	Imports (1)*(2) JD mill (4)	Customs Duty (1)*(3) (5)	Domestic outpt (1)-(4)-(5) JD million (6)
01)Agricul	495.25	42.23	0.00	209.14	0.00	286.11
05) Fishin	3.23	100.	0.00	3.23	0.00	0.00
15)Food & be	898.92	27.30	0.48	245.41	4.31	649.20
16)Tobacco	89.33	18.17	18.42	16.23	16.45	56.65
17)Textiles	23.06	77.63	5.09	17.90	1.17	3.99
18)Wear app	102.09	91.92	6.03	93.84	6.16	2.09
19)Leath&fw	26.26	28.84	1.89	7.57	0.50	18.19
21) Paper	20.18	62.64	4.11	12.64	0.83	6.71
22)Publish	8.01	11.01	0.72	0.88	0.06	7.07
23)Petrol	166.03	20.85	6.19	34.62	10.28	121.03
24)Chemic	116.53	69.25	4.54	80.35	5.27	30.91
25)Rub&pla	0.61	65.62	3.32	0.40	0.02	0.19
26)Non-metal	9.66	13.60	0.89	1.31	0.09	8.26
28)Fabric met	5.19	30.58	2.00	1.59	0.10	3.50
29)Mach nec	37.06	86.88	5.70	32.20	2.11	2.75
30)Office ma	9.25	93.84	6.15	8.68	0.57	0.00
31)Electr mac	0.48	50.65	3.32	0.24	0.02	0.22
32)Radio,TV	12.83	93.85	6.15	12.09	0.74	0.00
33)Medic,prec	1.52	80.99	5.31	1.23	0.08	0.21
34)Motor veh	50.20	75.70	22.76	38.00	11.42	0.78
35)Other trans	0.53	93.71	6.14	0.50	0.03	0.00
36)Furnit etc.	70.62	46.00	3.02	32.49	2.13	36.00
40)Elect&gas	105.34					105.34
41)Water sup	36.29					36.29
45)Construc	1.87					1.87
50)M.V sal/re	76.32					76.32
<b>TOTAL</b>	<b>2,366.66</b>			<b>850.54</b>	<b>62.34</b>	<b>1,453.78</b>

**Assembly of Components (Table 6)**

The next task is to assemble components in tabular array. First, domestic outputs at basic prices are listed. Then there appear values for total merchandise imports, and product taxes, as well as other taxes. Trade margins must be allocated to sectors 50) to 52). All components must add up to the full JD 5,001.30 million being analyzed. Table 6 appears next, with explanatory comments below it.

Table 6: Final breakdown of Table 1 grand total, with pro rata shares per JD 100 m.

Sector source	Table 6 col (6) Domestic JDm  (1)	Pro rata per JD 100 mill. Total (2)	Sector source	Table 4 Part 2 col (7) Domestic Etc. JDm (1)	Pro rata per JD 100 mill. Total (2)
01)Agriculture	286.11	5.72	52)Retail trade/rep	0.60	0.01
05) Fishin	0.00	0.00	55)Hotels & restau	33.00	0.66
15)Food & be	649.20	12.99	60)Land transport	96.04	1.92
16)Tobacco	56.65	1.13	61)Water transport	0.35	0.01
17)Textiles	3.99	0.08	62)Air transport	13.58	0.27
18)Wear app	2.09	0.04	63)Auxiliary transp	0.99	0.02
19)Leath&fw	18.19	0.36	64)Post & telecom	205.19	4.10
21) Paper	6.71	0.13	65)Financ intermed	0.54	0.01
22)Publish	7.07	0.14	66)Insurance	12.75	0.25
23)Petrol	121.13	2.42	70)Real estate	772.56	15.45
24)Chemic	30.91	0.62	71)Renting machin	8.23	0.16
25)Rub&pla	0.19	0.00	74)Other busin serv	24.62	0.49
26)Non-metal	8.26	0.17	75)Public administ	21.56	0.43
28)Fabric met	3.50	0.07	80)Education	279.34	5.59
29)Mach nec	2.75	0.05	85)Health & s.w.	86.03	1.72
30)Office ma	0.00	0.00	91)Membersh orgs	2.38	0.05
31)Electr mac	0.22	0.00	92)Recreation/sport	5.17	0.10
32)Radio,TV	0.00	0.00	93)Other services	36.55	0.73
33)Medic,prec	0.21	0.00	95)Hholds wth emp	10.89	0.28
34)Motor veh	0.78	0.02	Imports of services	57.68	1.15
35)Other trans	0.00	0.00	Government taxes	13.77	0.28
36)Furnit etc.	36.00	0.72	<b>SUBTOTAL (2)</b>	<b>1,681.82</b>	<b>33.63</b>
40)Elect&gas	105.34	2.11	<b>Extras:</b>		
41)Water sup	36.29	0.73	50)MV&petrol mrg	41.44	0.83
45)Construc	1.87	0.04	51)Wholesale marg	181.11	3.62
50)M.V sal/re	76.32	1.53	52)Retail margin	345.27	6.90
<b>SUBTOTAL(1)</b>	<b>1,453.78</b>	<b>29.07</b>	Sales Tax	385.00	7.70
<b>Combined prts</b>			Merchand. Imports	850.54	17.00
50)MV sale/rep	117.76	2.36	Customs Duties	62.34	1.25
52)Retail marg	345.87	6.91	<b>GRAND TOTAL</b>	<b>5,001.30</b>	<b>100.00</b>
Imports	908.22	18.15			
Govt. Taxes	461.11	9.23			

From Table 4 we have (in JD million) a column (3) total Trade Margin 567.82, of which sector 50) Motor vehicle and fuel margin takes 41.44, given by margins 20.74 on 23) Petrol and 20.70 on 34) Motor vehicles. Thus, the trade margin residue 526.38 is to be divided between 51) Wholesale margin and 52) Retail margin. Gross outputs of these sectors in year 2000 at basic prices are 122.71 for 50), 185.65 for 51), and 353.93 for 52), per column C of sheet 1 of Appendix E. Pro rata total outputs, this gives 181.11 to 51 and 345.27 to 52.

From Table 4 above we also have Sales Tax JD 385.00 million. These amounts are entered as extra rows in the right-hand column (1) of Table 6. Required amounts of output of these three sectors are smaller than their total outputs, and thus acceptable for the rather limited background information available.

Further components comprise Merchandise Imports and Customs Duties on these. Per Table 6, Imports total value is 850.54, and Customs Duties 62.34. All listed items of column (1) add up to the required aggregate JD 5,001.30 million. We may note that total Government Tax is 461.11, and total Imports 908.22, as entries on the bottom left under “Combined”. All column (2) entries are taken pro rata those of column (1), so as to add up to a total JD 100 million.

**Economic Impacts of JD 100 million Household Spending (Table 7)**

Our next objective is to get various impacts for the domestic outputs listed in Table 6 column (2). These calculations are done on Sheet 4 of Appendix E. In summary, Table 6 column (2) is copied onto Sheet 4 and various “direct multipliers” applied, to give impacts e.g. Employment. Impacts as calculated are then summed by columns. These summary results are presented in Table 7 below, with comments following. (See a more detailed discussion of Sheet 4 in Appendix D).

However, each column (2) domestic output also has Intermediate input costs, given in total by gross output less GVA, and such further cost impacts can be estimated by using assumed Irish 1998 input cost proportions. This aspect is pursued in the lower part of Sheet 2 of same Henry file, with Import shares and Customs Duty estimated, and domestic output residues copied into Sheet 4, to give further impacts. Their column aggregates are also copied into Table 7. Yet further impact implications are shown in Table 7, which needs careful description to be clearly understood.

Table 7: Economic Impacts derived from Table 6 column (2) data (in JD million)

Item	Table 6 col (2)	From domest outputs 1 <sup>st</sup> round	From Intermed. purchases 1 <sup>st</sup> round	Col (3) Intermed. 10.65 pro rata col (3) other	Row Total, If relevant (1) to (4)
	(1)	(2)	(3)	(4)	(5)
Gross Value Added(GVA)		43.40	9.30	5.34	<b>58.04</b>
Product Taxes	9.22		0.32	0.18	<b>9.72</b>
Imports	18.16		8.95	5.13	<b>32.24</b>
Aggregate domestic output	72.62				
Intermediate costs (= purchases)		29.22	10.65		
<b>TOTAL</b>	<b>100.00</b>	<b>72.62</b>	<b>29.22</b>	<b>10.65</b>	<b>(100.00)</b>
<b>GVA Details:</b>					
Taxes on Inputs		0.99	0.20	0.11	<b>1.30</b>
Employee Compensatn.		12.06	3.14	1.80	<b>17.00</b>
Capital Consumption		4.52	1.26	0.72	<b>6.50</b>
Operating Surplus		25.83	4.70	2.70	<b>33.23</b>
<b>Other Items:</b>					
Income Tax		0.16	0.09	0.05	<b>0.30</b>
Profits Tax		0.90	0.37	0.21	<b>1.48</b>
Household Income for spending		19.01	5.66	3.25	<b>27.92</b>
<b>Govt. Income Total</b>	<b>9.22</b>	<b>2.05</b>	<b>0.98</b>	<b>0.55</b>	<b>12.80</b>
<b>GDP (GVA + Product Tax)</b>					<b>67.76</b>
<b>GDP + Imports</b>					<b>100.00</b>
Employment (number)		7,052	1,900	1,090	<b>10,042</b>
		Source: Sheet 4 Row 70 Cols. M-U	Source: Sheet 4 Row 70 Cols. Y-AG		

Table 7 column (1) is taken from Table 6 column (2), and shows (in JD million) the total spending of 100 yielding 9.22 of Product Taxes, 18.16 of Imports, and 72.62 of domestic outputs. Column (2) shows the latter yielding 43.40 of GVA, and 29.22 of Intermediate costs. We may thus treat columns (1) and (2) combined as “first round” economic impacts of the 100 units spent.

Column (3) shows the analysis of the Intermediate 29.22 as yielding 9.30 of GVA, 0.32 of Product Taxes, 8.95 of Imports and 10.65 of further Intermediate. We could stop here and take combined results of columns (1), (2) and (3) as “Direct plus Indirect” Impact results. However, we may look at further implications, via the 10.65 of Intermediate costs shown in column (3) as further inputs.

This 10.65 Intermediate has been allocated in column (4) as pro rata column (3) components other than itself, and of aggregate value 18.57. Thus, column (4) has been filled in by applying the ratio  $10.65/18.57$  to column (3) entries other than Intermediate.

We can now do an overall check on column (7) row-sum results, remembering a property of Input-Output Analysis for “Direct plus Indirect” impacts. This property is that the sum of GDP plus Imports impacts makes up precisely 100% of the Final Demand stimulus, which here is the 100 units of Household Spending. We find in column (7) that GDP plus Imports shows 100.00. Thus our column (7) estimates are satisfactory in the way considered.

A few comments on Table 7 column (5) results are in order. Gross Value Added (GVA) is some 58 percent of the 100 spending stimulus, with component details shown below, such as 17 percent taken by Employee Compensation. Total Government Income takes 12.8 percent, covering Product Tax, Taxes on Inputs, Income Tax and Profits Tax. Thus, Gross Domestic Product (GVA plus Product Tax) comprises an impact of 68 percent of the spending stimulus. The other 32 percent leaks out of the economy by way of Imports.

The Employment impact is an estimated 10,042 jobs, intended to be “full-time equivalent”, per revised Employment estimates on Sheet 1 of Appendix D. It is not possible to be precise about “full-time equivalent” numbers, through lack of relevant data. However, under “pro rata” assumptions, Household 2000 expenditure of JD 4,856 million would give 48.56 times the number quoted above, namely 487,636 jobs due to this expenditure.

Data supplied by the authorities in Jordan (employment by econo activity.xls) gives a total 975,256 persons (both paid and unpaid) as year 2000 number employed. On this basis, a residue of about 488,000 jobs (or persons employed) is accounted for by the other year 2000 Final Demands, namely Government Current Expenditure, Capital Formation and Exports. These together make JD 5,256 million per Table 22.1 (page 223) of **Statistical Yearbook 2001**. Comparison with the Households estimate of 487,636 jobs suggests that Household expenditure is roughly as labour-intensive as the rest of Final Demands (measured by “direct plus indirect” Employment absorption).

Table 7 column (5) estimates may be regarded as “Direct plus Indirect Multipliers” per JD 100 million of year 2000 Household Expenditure.

Table 7A following details the major sectoral contributions to Employment, as generated by the typical JD 100 million of Household Expenditure, and listed in Table 7 bottom row. Column (1) of Table 7A shows that thirteen sectors cover almost 90% of the 7,052 jobs of Direct impact. Three sectors dominate, namely Education (80) with 1,025 jobs, Retail Trade (52) with 1,211 jobs, and Food & Beverages (15) with 817 jobs.

**Table 7A: Sectoral Employment Impacts of JD 100 million Household Expenditure**

<b>Sector</b>	<b>Direct (Table 7 col. 2) (1)</b>	<b>Indirect (Table 7 col. 3) (2)</b>	<b>Indirect residue (Table 7 col.4) (3)</b>	<b>Total Dir.+Indir (1)+(2)+(3) (4)</b>
Agricultur (01)	630	354	203	1,187
Food & bev (15)	817	103	59	979
Furnitur et (36)	124	20	11	155
Motor sales(50)	422	14	8	444
Wholesale (51)	585	0	0	585
Retail trade(52)	1,211	2	1	1,214
Land trans(60)	291	71	41	403
Post &tele (64)	411	84	48	543
Real estate (70)	354	9	5	368
Other busi (74)	56	495	284	835
Education(80)	1,025	0	0	1,025
Health (85)	204	81	46	331
Other serv(93)	159	35	20	214
REST	763	632	364	1,759
<b>TOTAL</b>	<b>7,052</b>	<b>1,900</b>	<b>1,090</b>	<b>10,042</b>

Sources: column (1) is from Sheet 4 column R; column (2) is from Sheet 4 column AD.

Table 7A columns (2) and (3) cover the Indirect impacts of the same sectors, column (3) entries being in proportion to those of column (2), by the totals proportion 1090/1900. Column (4) gives combined Direct + Indirect impacts, and shows three prominent sectors: Education (80) 1,025 jobs; Agriculture (01) 1,187 jobs; Retail Trade (52) 1,214 jobs.

**APPENDIX D**

**BACKGROUND 2000 JORDAN DATA  
DISCUSSION OF EXCEL NOTEBOOK**

### Introduction

This Appendix explains and discusses calculations occurring in the Excel notebook which comprises Appendix E. Data sources are given generally as footnotes in the Excel notebook, and so will not be repeated here. The notebook derives various coefficients and multipliers required in calculating Jordan Tourism impacts of year 2000. The notebook calculations may be a bit cryptic without some covering notes such as those following below. Each sheet is discussed in turn, starting with Sheet 1.

#### **Sheet 1: Direct Input Coefficients and Net Supply of Goods and Services, with Customs Duty estimates.**

The upper part of Sheet 1 (rows down to row 61) derives, on the right, direct input coefficients from year-2000 basic data on the left. These rows treat most sectors from 01) Agriculture (combined with 02) Forestry) down to 99) Extra-territorial Organizations. Of the basic data, a few void sectors (for Jordan) have values 0.0001 as gross outputs, to avoid “division by zero” in calculating the direct input coefficients. Notes on data sources and Employment allocation appear in rows 90-100.

Basic data on the left (columns B to L) for each listed sector comprise gross output at basic prices, Gross Value Added (GVA) components including explicit Taxes paid as costs of production, and estimated Employment. Further sub-sector row details appear in rows 65 to 86. Breakdown of Hotels & Restaurants total employment 28,144 persons between its two sub-sectors has been estimated by Henry pro rata Compensation of Employees.

On the right, in columns O to T, derived “Direct Input Coefficients” or “Direct Multipliers” are shown. These are obtained by dividing left-hand row values by gross output of that row. Employment direct multipliers are averages per JD million gross output. Numbers employed during 2000 are the simple count of full-time and part-time employees combined – information was not available to permit “full-time equivalent” estimates to be calculated.

The lower part of Sheet 1 shows estimation of available supplies of goods and services for national use in year 2000. Numerical data take rows 105-164, with Notes in left-hand side of rows 141-150.

In summary, domestic outputs of goods (at basic prices) have exports subtracted, and imports (cif) have re-exports subtracted, so as to leave a net available combined supply (of aggregate value JD 5,614 million) in column I. The domestic output share proportions of this are shown in column J. Columns K and L estimate matching Wholesale and Retail gross margins. Columns O and P give derived percentage gross margins on joint supplies of column I, on the assumption of such margins spread evenly over total supply of relevant rows. Services generally do not have trade margins as such, and are assumed to have zero Imports and Exports for present purposes. This explains some blank columns among Services rows.

Column R shows estimated Intermediate costs of Jordan 2000 economic activities, taken from Sheet 2 to be discussed below. Column S (derived as column I less Column R) shows net supply available for “Final Demands” comprising Households, Tourists, Capital Formation and Government Current Expenditure. (Exports and Re-Exports have already been subtracted.) Some negative entries in column S indicate that column R estimates are too large.

Trade margin notional rates are derived in column U, by assuming columns K and L combined apply to column S amounts. Many of the column U entries look unrealistic. “Reasonable” estimates of trade margin percentage rates (on supplies at basic prices) appear in column V. These are intended mainly for analysis of expenditure by Households and Tourists. This whole exercise across the lower part of Sheet 1 illustrates how some unacceptable results have to be replaced by reasonable estimates, where further data detail is not available.

Estimation of shares for Merchandise Imports, Import Customs Duties and Domestic Outputs (out of their year 2000 combined values) occurs in columns W to AC of rows 105-134. Columns W to Z bring together the domestic and import supplies (net of exports and re-exports) and estimated Customs Duties, so as to give joint “total supply cost” in column Z. Derived percentage shares occupy columns AA to AC. This treatment of shares assumes uniform proportionate breakdown across all purchases in each row, before any possible trade margins and sales taxes are added.

The total Customs Duties amount of year 2000 is JD 260.5 million, per **Table (5) Central Government Domestic Revenues**. Rates for specific duties appear in the file “general sales tax regulatio.doc”, in particular “Regulation No. (80) of 2001: Article (3)”. Updated supplementary information by Customs experts in Jordan has also been made available. A 30% rate applies to cif value of Motor Vehicles and Tyres and Refined Petroleum, with some 100% for Tobacco products, and similar rates on Alcoholic beverages, thus accounting for some JD 168 million, as follows (in JD million): beverages 4; tobacco 23; petrol 40; tyres & tubes 6; vehicles 95, where possible based on detailed imports net of re-exports.

Parts of many other groups are also subject to a 30% rate. In order to make up the total required JD 260.5 million, a 6.56% duty has been applied to other manufactured imports row values, with the required aggregate shown in column X row 134. This kind of estimation process was necessary, given that explicit Duty amounts were not available for individual products.

### Sheet 2: Intermediate Cost Estimates (Jordan year 2000)

This sheet shows how Intermediate cost details are derived for Jordan year 2000 economic sectors. The only available Jordanian data gave a breakdown between “goods” and “services” aggregate input costs for a few Services sectors. This breakdown was used to permit two separate scaling procedures to occur in relevant columns, as can be seen by noticing non-zero entries in rows 76-77 of columns AO-AT.

Irish 1998 “Use Table” sectoral input cost data are uniformly rescaled so as to provide Jordan 2000 estimates. All values are at purchasers’ prices. **The goods rows include merchandise imports (cif) and import duties. Such imports and import duties need to be deducted**, in estimating “Indirect Impacts”, as will be shown and explained in discussion of Impact estimation. Domestic output percentage shares of combined domestic plus merchandise imports plus customs duties are already available as one method of removing imports and import duties, these shares appearing in column AC of rows 105-133 of Sheet 1 above. Specific input costs are estimated for two sub-sectors of 55) Hotels etc., in Sheet 2 columns BX-BZ.

Only a brief further discussion is in order. The Irish 1998 cost data occupy rows 7-70, and columns D to BK, with 55) Hotels & Restaurants tentative cost breakdown in columns BX-BZ. Jordan 2000 data are shown in columns BP-BR, specifying sector rows, gross outputs and total Intermediate costs, taken from Sheet 1 above. Rows 68-70 show estimated column sums, with Goods rows’ input aggregate cost in row 69, Services rows’ input aggregate cost in row 70, and combined total Intermediate cost in row 68.

The lower portion, rows 75-143, shows Jordan pro rata cost estimates. Scaling ratios are shown in row 78, taken usually as Jordan total Intermediate / Irish corresponding total Intermediate, but done separately for goods versus services in a few Services columns for which such subtotals are available. Jordan 2000 column sums appear in row 143, with related gross outputs (at basic prices) in row 148.

These gross outputs and related Intermediate cost details are the basis for estimating Intermediate cost amounts of any Impact gross outputs. Lower portions of Sheet 2 are used as follows. Some Tourism impact generates a set of domestic gross output estimates. These are applied to the cost structure of rows 82-141 to generate a set of costs. Adding these costs along rows, and extracting estimated domestic gross output shares, enables various Impacts (e.g. Employment) to be derived. Each row residue is an Imports cost.

A further set of cost calculations occur for breakdown of Intermediate costs of domestic outputs relating to JD 100 million Household expenditure. (see Appendix C for full description). These calculations occupy rows 149-213, with column details taken in proportion to background Irish 1998 costs. Row sums appear in column BN. Columns BO-BQ have proportions (%) taken from Sheet 1 columns AA-AC, re. merchandise Imports, Customs Duties, and Domestic Output residues for goods sectors (01) to (36), other sectors having 100% domestic output. Application of these percentages to BN values gives Imports (total value JD 8.949 m.) in column BR, Customs Duties (total JD 0.317m.) in column BS, and residual domestic outputs in column BT. This latter column has been copied into Sheet 4 column X, as discussed below.

Jordanian Tourist Intermediate input cost calculations occupy rows 219-281, with row sums in column BN, of total value JD 59.77 million. Breakdown between Imports, Customs Duty and Domestic gross outputs occurs in columns BR to BT. Column totals are (in JD million) Imports 16.63, Customs Duty 1.17 and Domestic outputs 41.97. The latter in column BT are copied into Sheet 5 column X, permitting GVA etc. impacts to be calculated (and comprising “Indirect” impacts) across columns Y to AG of Sheet 5.

A similar treatment of Arab Intermediate input costs worth 86.636 (in JD million units) occupies rows 289-352, resulting in 1.39 of Customs Duties, 21.09 of Imports, and 64.15 of Domestic output. The latter sectoral detail is transferred to Sheet 5, for estimation of “Indirect” impacts.

Sheet 2 rows 358-423 treat Foreign Intermediate input costs worth 99.901 (in JD million units), resulting in 2.781 of Customs Duties, 31.676 of Imports, and 65.444 of Domestic outputs. The latter sectoral detail is transferred to Sheet 5, for estimation of “Indirect” impacts.

### Sheet 3: Income Tax and Corporation (Profits) Tax Estimation

This sheet uses available data on Jordanian tax rates to allocate Income Tax and Corporation (Profits) Tax of year 2000 across sectors. Direct input coefficients are then derived (per JD of sector gross output at basic prices) for each of these two kinds of tax.

Savings are then subtracted off residual amounts of Compensation of Employees plus Operating Surplus, to leave estimated Household Income for Spending in column AA, with derived direct input coefficients (or direct multipliers) in column AB. Footnotes are available in rows 65-68 as some explanation. The distorting effect of “Imputed Rent” is avoided by omitting Operating Surplus of (70) Real Estate from the Profits Tax calculations.

The total year 2000 amount to be distributed is JD 161.0 million, of which corporations yield JD 97.3 million and remainder JD 63.7 million “Income Tax” comes from salaried and self-employed persons at work. The data source used is **Table (5) Central Government Domestic Revenues** group “Taxes on Income and Profits”.

The intended approach is first to add together Compensation of Employees (CE) and Operating Surplus (OS) in each of the 60 or so economic sectors for year 2000. Next, average compensation per paid employee is applied to all employees to estimate “Compensation Equivalent” out of which must come the required JD 63.7 million Income Tax. The residue of CE plus OS would then be used, to yield the required JD 97.3 million Profits Tax.

The file “income tax law”.doc provided by the authorities in Jordan is the source of the following taxation rates. Corporation Tax rates are 15% of taxable profits across activities of Metallurgy, Manufacturing, Hotels, Hospitals, Transport and Construction, and 35 % for Financial, Insurance and Banks, and 25% for other activities, subject to minimum capital investment of JD 1 million in some sectors. Personal Income Tax rates on taxable income are 5% through the first 5,000 JD, 10% through the next 2000, 15% through the next 4,000, and 20% through the next 4000, with progressively higher rates, all subject to partial rebate of some taxable amounts.

The intended method was not fully operable, due to limited available data. Sheet 3 column H “average annual compensation per employee” could not be fully filled in from sources independent of Sheet 1 entries. However, its upper part draws on averages derived from Table 6.1.1 (page 58) year 2000 Industrial Survey of **Statistical Yearbook 2001**. For corresponding rows of column I, “Compensation Equivalent” is the product of column H averages by column G number of employees. For 01) Agriculture row 5, column I value is taken to be the full CE plus OS amount. For the lower part of column I, column D values were repeated, as the only available data source.

As bases for taxation, columns J and K were compiled. Column J is the residue of OS, after subtracting column I from column F. Thus, column J is the basis for Corporation (Profits) Tax estimates leading to column S final estimates. Column K gives average Compensation per employee, obtained as column I / column G, thus column K is basis for Income Tax estimates finalized in column P.

Regarding Income Tax, average “tax-free” amount per employee was not available for any sector. Accordingly, column N “indicative” tax percentage rates were devised in line with rates quoted above, by taking account of column K averages per employee. These rates applied to column I amounts gave Income Tax “first estimates” in column O. Their aggregate JD 143.30 million was used to provide a uniform re-scaling factor 63.70/143.30, applied to column O values and yielding column P estimates which have the required aggregate JD 63.70 million.

Regarding Corporation (Profits) Tax, a similar method was applied. The rates quoted above were used, to fill in column Q. These column Q percentage rates when applied to column J amounts gave “first estimate” Profits Tax in column R, with omission of 70) Real Estate because of “Imputed Rent” complications. Column R estimates (of aggregate value JD 215.94 million) have been uniformly re-scaled so as to give column S estimates having required aggregate JD 97.30 million.

Direct input coefficients appear in columns U and V, given by row entries of columns P and S divided by column C gross outputs.

We can get sectoral “Household Income for Spending” by the workings in columns Y to AA. Column Y shows residue of (CE + OS), after removing Tax amounts of columns P and S, of aggregate value JD 3,598.04 million. From column Y amounts we need to remove “Saving”, which has year 2000 aggregate value JD 699.5 million, per Table 22.3 (page 225) of **Statistical Yearbook 2001**. To remove Saving, the average rate 699.5/3598.04 has been applied to column Y values so as to give column Z Saving estimates. Household Income for spending, shown in column AA, is column Y less column Z. Direct input coefficients of column AB are derived in the usual way as column AA amounts divided by column C gross outputs.

Matching sub-sector details appear in rows 72-93. The sum of the sub-sector components may differ from corresponding sector amounts in the rows above. However, these sub-sector details will be used where possible, as extra available information.

### **Sheet 4: Impacts of Households Spending JD 100 million**

The full background discussion is set out in Appendix C. Sheet 4 column B shows domestic outputs, with summary Imports and Product Taxes, making up the full JD 100 million Household Expenditure (or spending), these details coming from Table 6 of the memo referred to.

Sheet 4 columns C-K have sectoral direct coefficients (or multipliers) taken from Sheet 1. These when multiplied by column B values give “Impacts” in JD million in columns M-U. Column totals are in row 70, and include (in JD million) impacts 43.40 of GVA, 12.06 of Employee Compensation, and 19.01 of Household Income (for spending), as well as 12,274 Employees.

Further impacts occur through the Intermediate purchases absorbed by the domestic outputs of column B, and given in column W as column B less column M, and of total value 29.22 (in row 70). These Intermediate purchases require analysis on Sheet 2 rows 149-213, with outcome copied into Sheet 4 column X. This shows domestic outputs, as well as Imports worth 8.95 and Taxes (import duties) of 0.32, making up the required total JD 29.22 million.

Application of the same multipliers gives the impacts shown in columns Y-AG. Column totals include (in JD million) 9.30 of GVA, 3.14 of Employee Compensation, 5.66 of Household Income, as well as 2,600 Employees.

### **Sheet 5: Impacts of Tourist Expenditure and Carrier Fares (year 2000)**

Sheet 5 repeats the procedures of Sheet 4, for year 2000 expenditure by each of the three Tourist nationalities and Carrier fares. The top portion treats Jordanian tourists, the middle portion treats Arab tourists, while the lowest portion treats Foreign tourists, with their Carrier receipts also included. The full set of 60 sector rows is kept, to allow for domestic outputs over a wide range comprising the impacts of Intermediate purchases (Indirect impacts).

Sheet 5 rows 6-65 column B has the Jordanian purchasing stimuli taken from Appendix B Table 4 “Jordanian” column, comprising 14 non-zero entries of aggregate value JD 151.40 million. Columns C to K have the direct multiplier coefficients (copied from Sheet 4). Columns M to U have the “Direct” impacts, the products of column B stimuli by their row multipliers, of relevance for the 12 rows of non-zero sector output stimuli.

Column W gives Intermediate input costs, of aggregate value JD 59.77 million and obtained as column B gross outputs less column M gross value added (GVA). Column W has twelve non-zero Intermediate entries needing treatment in Sheet 2 rows 219-281, to obtain their impacts. After deduction of Imports and Customs Duty, the residual domestic outputs appear in column BT of Sheet 2. The latter is copied into Sheet 5 column X, and comprises domestic outputs worth (in JD million units) 41.97, with Imports of 16.63, and Customs Duty worth 1.17, the sum of these three being 59.77, the same as the total Intermediate cost treated on Sheet 2.

The same direct multiplier coefficients are applied to column X, so as to give impacts in columns Y to AG. These column sums (in row 70) are the main interest among this set of impacts. We see GVA worth 21.18, with 4,848 Employee jobs, and 12.77 of Household Income (for spending).

Sheet 5 rows 74-142 apply a similar process to Arab Tourist and Carrier data, drawing on the Arab column of Table 4, which shows JD 219.35 million as total year 2000 expenditure. Impact results appear in Tables 6 and 6A of Appendix B.

Sheet 5 rows 146-218 apply a similar process to Foreign Tourist and Carrier data, drawing on the Foreign column of Table 4, which shows JD 251.70 million as total year 2000 expenditure. Impact results appear in Tables 7 and 7A of Appendix B.