| | |
|---|---|
| Contract No.: | 278-C-00-02-00210-00 |
| Contractor Name: | Chemonics International, Inc. |
| USAID Cognizant Technical Office: | Office of Economic Opportunities<br>USAID Jordan |
| Date of Report: | August 2005 |
| Document Title: | 'Impact of Trade Liberalization on Jordar Manufacturing and Services Performance, 19 2003'<br>Final |
| Author's Name: | Geoff Wright/The Services Group |
| Activity Title and Number: | Achievement of Market-Friendly Initiatives and Results Program (AMIR Program)<br><br>PSPI Component, 'Issues Paper on National Enterprise Strategy Project,' Task No. 531.01 |

Impact of Trade Liberalization on Jordanian
Manufacturing and Services Performance, 1994-2003

Final Report
August 2005

**Data Page**

| | |
|---|---|
| Name of Component: | PSPI |
| Author: | Geoff Wright/The Services Group |
| Practice Area: | Trade and Investment |
| Service Offering: | N/A |
| List of Key Words Contained in Report: | Trade liberalization, imports, WTO accession, tariffs, free trade agreements, manufacturers,services |

## Abstract

Part I of the report examines Jordan's trade liberalization path from the early 1990s under World Bank support through WTO accession to implementation of free trade agreements with major trading partners. Part II of the report compares changes in the source and composition of imports with tariff reductions. Part III of the report examines key performance indicators of 80 manufacturing and 55 service subsectors over the period 1994-2003 using Department of Statistics survey data.

**Table of Contents**

## List of Tables



Deleted: 94

Deleted: 96

## List of Figures

## Acronyms

| | |
|---|---|
| CBJ | Central Bank of Jordan |
| CPI | Consumer Price Index |
| DOS | Department of Statistics |
| EUAA | European Union Jordan Association Agreement |
| FDI | Foreign Direct Investment |
| GAFTA | Greater Arab Free Trade Agreement |
| GDP | Gross Domestic Product |
| GVA | Gross Value Added |
| HS | Harmonized System (of tariff nomenclature) |
| ISIC | International System of Industrial Classification (ISIC Revision 3) |
| JIB | Jordan Investment Board |
| JUSFTA | Jordan United States Free Trade Agreement |
| MENA | Middle East and North Africa |
| MFN | Most Favored Nation |
| MIT | Ministry of Industry and Trade |
| NTB | Non-Tariff Barriers |
| QIZ | Qualifying Industrial Zone |
| TRI | Trade Restrictiveness Index |
| UAE | United Arab Emirates |
| WPI | Wholesale Price Index |
| WTO | World Trade Organization |

## Executive Summary

### Overview

This report seeks to compare Jordan's trade liberalization path with industry performance over the ten-year period 1994-2003. Part I examines the reduction of import barriers in Jordan over time and their impact on imports. Part II examines the profitability and productivity of manufacturing and service sectors using survey data from the Department of Statistics (DOS).

It is not possible to isolate the influence of changing trade policy from other macroeconomic and microeconomic reforms implemented by the Government of Jordan since 1989. Price and exchange rate stability restored investment planning certainty for businesses by the mid-1990s. Financial market reform and public debt reductions have lowered the cost of capital for businesses. Terminating monopoly concessions over key infrastructural and natural resource sectors have encouraged competition and productivity increases. Trade policy reform has opened access to foreign markets and potentially encouraged competition and lowered the costs of production.

One factor inhibiting the growth of private investment in the 1990s was the relatively high level of local interest rates. Bill and bond rates on facilities provided by local banks peaked at 14 percent in 1998. This rise in rates in the 1990s coincides with a relative fall in sales, profitability and capital investment revealed by DOS survey data for both manufacturing and service firms.

The report concludes that manufacturing has weathered the effects of trade liberalization and the slow economic growth of the late 1990s rather well. Despite large falls in 1996 and 1998, profit margins in 2003 were 20 percent greater than profit margins in 1994. However, profits recovered at the expense of labor; real wages remained constant over this period and manufacturing has ceased to be an engine of employment growth. Worse, labor productivity has been modest and has not led to increasing exports, except in a small number of subsectors. There are some cases where a relationship between performance and trade protection can be identified – those firms experiencing declining profitability and labor productivity were either protected through relatively high tariffs on competing imports or government-provided exclusive concessions.

Services have not fared as well as manufacturing. Like manufacturing, services' employment growth has stagnated since 2000. This is significant, given that services employ three-times more workers than manufacturing. Unlike, manufacturing, services' productivity declined over the ten-year period by about 15%, and profitability is still to recover its levels from the mid-1990s. Fortunately, due likely to their smaller size, greater start-up ease and their greater ability to change production techniques, services' firms have not passed on their problems to their workers. Real wages increased by 27% over the ten-year period, 1994-2003. Moreover, capital expenditure has generally increased over time and business income tax has maintained a realistic share of profits.

Service subsectors display a stronger relationship between market access liberalization and performance than manufacturing subsectors. Profit margins are more likely to have decreased and output to have increased over time in any subsector the larger the degree of

liberalization of that subsector. Conversely, currently high restrictions on foreign competition are associated with decreasing output and increasing profit over time. In particular, results suggest that more open subsectors have a more productive labor force and provide higher real wages than more protected sectors. These are important results supporting the arguments for greater liberalization of Jordan's services. In particular, transport is a vital infrastructural service for industry. Current road transport conditions impose unnecessarily high costs on exporters of goods and services.

**Part I - Path of Trade Liberalization**

Jordan began reforming its international trade regime in 1989 under World Bank assistance to restore macroeconomic stability and liberalize the economy. The import weighted average tariff was reduced from 34.4 percent with 26 percent dispersion in 1989 to 25 percent in 1992. In November 1994 the maximum tariff was reduced to 50 percent (excluding fees and surcharges) except on alcohol, tobacco and motor cars. The plethora of tariff bands was consolidated from 24 to ten tariff bands. In 1996 tariffs on 492 capital goods were reduced to zero, and a maximum tariff of 10 percent placed on an additional list of 218 capital goods. The maximum tariff including fees and surcharges was reduced from 70 percent to 50 percent on all goods including cars, supplemented by a new excise tax on cars. The maximum tariff was further reduced to 35 percent in September 1999.

A number of specific trade barriers that were addressed during this pre-WTO accession period continue to raise concerns:

- Although significantly reduced from being equivalent to 51 percent of total imports in the late 1980s to about 15 percent today, exempting classes of importers from paying customs duties continues to frustrate revenue collection and administrative efficiency of Customs. As tariffs decline, removing exemptions imposes less additional cost on the formerly exempt importers. The government could address exemptions as part of its review of investment incentives.

- About 40 percent of imports were controlled by some form of non-tariff barrier in 1989, generally an import license. Relatively few products today are subject to import licenses. However, remaining licenses act as an unnecessary barrier to trade. Officials are now revising the list of imports requiring an import license. Now is the time for agencies to work together to rationalize the list – based on the agreed principles of health and environmental considerations.

- WTO members have agreed to give Jordan more time to provide exporters an income tax exemption on their profits and a refund of customs duties under a duty drawback scheme. These exemptions forego revenue and are likely ineffective at encouraging exports. As tariffs are removed from all capital and intermediate goods, discontinuing export subsidies should have little impact on export volumes. It is recommended that the policy of exempting export profits from income tax is not continued after 2005 consistent with the AMIR Program's recommendations on investment incentive reforms.[1]

[1] Outlined in Duanjie Chen, *Reformulating the Tax Incentive Program in Jordan*, AMIR Program, 2004

**WTO Accession**

Commitments to further trade reforms continued under Jordan's accession to the World Trade Organization (WTO). WTO membership does not necessarily involve greater trade liberalization. The WTO acts as a forum for negotiations to reduce market access barriers, and it also is a dispute settlement body enforcing more transparent and equitable rules for conducting trade.

Table (I) below seeks to bring together estimates of most favored nation tariff changes over the past ten years. These tariff changes apply to imports from all countries. The Government made unilateral changes to the MFN tariff schedule before 2000. Changes made since 2000 have been guided by the WTO accession tariff reduction program agreed with WTO member countries.

**Table (I). MFN Tariff Reductions, 1994-2010**

| | Applied Tariff | | | | | | | Bound Tariff | |
|---|---|---|---|---|---|---|---|---|---|
| | 1994 | 1996 | 1998 | Jun 2000 | 2002 | July 2004 | May 2005 | 2005 | 2 |
| Simple Average Tariff | 29.0 % | 26.5% | 24.4 % | 15.9% | 15.3 % | 12.8% | 11.7% | 17.4 % | 1 |
| Standard deviation | 22.7 | 21.5 | 16.4 | 14.8 | 15.2 | 15.7 | 15.3% | | |
| Import-Weighted Average Tariff | 20.8 % | 19.8% | 16.3 % | 13.4% | 13.0 % | | | | |
| Number of Main Bands | 24 | 10 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Maximum tariff (not alcohol/tobacco) | 220. 0% | 50%+ 20% | 40.0 % | 30.0% | 30.0 % | 30.0% | 30.0% | 30.0 % | 3 |
| Share of tariff lines at 30% or more | NA | NA | NA | 39.0% | 33.2 % | 33.0% | 20.6% | 23.5 % | 2 |
| Share of tariff lines 15%-29% | NA | NA | NA | 4.9% | 7.8% | 5.9% | 16.4% | 30.8 % | 3 |
| Share of tariff lines 1%-14% | NA | NA | NA | 38.5% | 38.9 % | 18.5% | 16.2% | 38.6 % | 3 |
| Share of tariff lines that are duty free | NA | NA | NA | 17.6% | 20.1 % | 42.6% | 47.0% | 7.1% | 8 |
| Capital Goods ** | 4.6% | 4.6% | 4.6% | | 4.4% * | | 9.2% simple | | |
| Intermediate Goods ** | 22.6 % | 19.7% | 19.8 % | | 4.4% * | | | | |
| Consumer Goods ** | 35.1 % | 30.5% | 23.2 % | | 14.1 %* | | | | |
| Minerals and Mining ** | 1.0% | 1.0% | 0.9% | | 0.9% * | | | | |
| Agriculture | 9.2% | 8.3% | 7.8% | | 4.5% * | | 16.0 simple (ad val only) | | |

Source: See Table 1 in Part I of this report.
Notes: * refers to 2003 values; ** refers to trade-weighted average tariff.

Two trends emerge from the table:

1. MFN tariffs have fallen steadily over the past 11 years for which data is available. The import-weighted average MFN tariff is likely less than 11 percent this year[2]. However, this low average rate hides what has become essentially a two rate structure – 30 percent and 0 percent.

2. Jordan appears to have already satisfied its WTO commitments that were to be achieved by 2010. Almost half of all tariff lines are duty free. However, more analysis is required to determine if the current 30 percent tariffs on products need to be reduced to meet WTO targets.

The government needs to carefully assess the impact that the evolving tariff rate structure is having on business. Different tariffs on inputs and outputs can lead to a large range of effective rates of protection on different industries – thus distorting relative investment. See Jim Robertson's report for the Amir Program that outlines the case for Jordan to continue reduction of its MFN tariffs unilaterally. This is a first best policy reform benefiting the entire economy.[3]

**Jordan's Regional Trading Arrangements**

Jordan has enjoyed duty and quota free access to the European Union (EU) on its industrial exports since 1979. The new Jordanian-EU Association Agreement (EU AA) provides for Jordan to progressively liberalize its own market to EU exports over a 12-year period starting on 1 May 2002. There is no liberalization of agricultural products entering Jordan under the EU AA and Jordan has delayed effective liberalization of industrial products under the EU AA, as long as possible, starting in 2006 and ending in 2014 for most products subject to the maximum MFN rate of 30 percent.

The Jordan-United States Free Trade Agreement (JUSFTA) came into effect on 17 December 2001. In addition to liberalizing trade in some services, the agreement provides for the gradual elimination of all duties and quotas on all goods traded between the two countries by 2010, except tobacco and alcohol. Goods in Categories A, B and C are already duty free, representing 41 percent of total tariff lines. Goods in Category E (representing 21 percent of total tariff lines) adopt the WTO accession tariff reduction schedule. Over 85 percent of these products were duty free when the JUSFTA entered into force. Tariffs on goods in Category D (representing 38 percent of total tariff lines – comprising consumer goods, and many capital and intermediate goods competing with Jordanian manufacturers) have been halved to 15 percent. Passenger motor vehicles enjoyed their first tariff reduction in January 2005, from 30 percent to 24 percent. The simple average tariff on imports from the United States has already fallen from about

[2] Further work is necessary to determine the trade-weighted average tariff under the new tariff schedule published by Customs in June 2005.
[3] *Developing a Strategy for Jordan in the WTO Non-Agriculture Market Access Negotiations*, prepared by Jim Robertston for the AMIR Program, 2005.

15.9 percent in the base year of 2000 to 5.5 percent by January 2005. The simple average MFN tariff had only fallen to 11.7 percent by May 2005.

The United States International Trade Commission (USITC) forecast the impact of removing Jordanian tariffs on the value of US exports of cereals, electrical machinery and machinery and transport equipment to Jordan. US exports of cereals, other than wheat, were expected to increase by 14 percent over their 1998 values, electrical machinery (HS Chapter 85) by 104 percent, and machinery and transport equipment (HS Chapters 37, 84, 86-91) by 64 percent.

The Arab Economic and Social Council of the League of Arab States adopted the Agreement on the Facilitation and Development of Trade Among Arab States in 1981, establishing the Greater Arab Free Trade Area (GAFTA). Sixteen countries have ratified the Agreement: Bahrain, Egypt, Jordan, Iraq, Kuwait, Lebanon, Libya, Morocco, Oman, Palestinian National Authority, Qatar, Saudi Arabia, Syria, Sudan, Tunisia, United Arab Emirates (UAE) and Yemen.

GAFTA members removed remaining tariffs from products traded among member countries on 1 January 2005. This is a significant achievement given the region's high MFN rates. The common and country-specific product exemption lists have been discontinued; however, about 400 products are excluded because of security and health concerns. GAFTA does not cover trade in services.
Jordan signed a free trade agreement with Singapore in April 2004. This is not expected to have a significant effect on Jordan's direction of trade. Jordan imported 8.6 million JD worth of goods from Singapore in 2004.

Jordan is currently negotiating with a potentially larger trading partner – Turkey. The government is also considering negotiating with Canada. These new agreements raise the issue of the economic costs to Jordan of trade diversion from the lowest cost producer, particularly China, to treaty partners. The Government needs to develop a comprehensive trade strategy to direct future trade policy. Given that Jordan has already secured agreements with its major trading partners under GAFTA, JUSFTA or EUAA there is little reason for Jordan to continue maintaining import tariffs on products that fall outside preferential agreements.

**Part II – Impact on Imports**
Total imports have increased dramatically in the five year period 1999 – 2004, by an average of 18 percent annually compared with 5 percent annually in the 1990s. The largest single year of growth was 2004 with a total increase of 42 percent. Accounting for the increase in the cost of oil imports that year still leaves a very high growth rate of 36 percent.

The Middle East and North Africa (MENA) region has enjoyed substantial growth over the past five years and has increased its share of total imports from 22 percent to 31 percent over this period. So, GAFTA appears to have had some effect on regional trade. China has also enjoyed substantially more growth in the last five years than during the 1990s and has more than doubled its share of total imports. Jordan applies its MFN tariffs to both WTO and non-WTO member countries.

Growth of US exports to Jordan has also increased significantly recently and has enabled the United States to maintain its 7 percent share of total imports. This recent growth is likely due to the JUSFTA. Imports from the EU have grown more modestly with less differentiation between growth rates in the 1990s and the period since 2000. As a consequence the EU has lost 30 percent of its market share in Jordan since 2000. However, EU exports to Jordan increased by 26 percent in 2004, after three years of very low or negative growth. This may reflect some impact of the EUAA in 2004.

**Table II. Growth in Imports, Value, 1991-2004**

| Source | Average annual growth | | % Share of total imports | |
|---|---|---|---|---|
| | 1991-1998 | 1999-2004 | 2000 | 2004 |
| China | 16% | 42% | 3 | 8 |
| MENA | 5% | 27% | 22 | 31 |
| US | 1% | 15% | 7 | 7 |
| Other | 8% | 15% | 33 | 32 |
| EU | 6% | 10% | 32 | 22 |
| Total | 5% | 19% | 100 | 100 |

Source: Central Bank of Jordan (CBJ) Annual Statistical Series.

Imports by commodity show a volatile path over the last twenty years. Total import growth matched gross domestic product (GDP) growth in the late 1980s but slowed relative to GDP in the 1990s to the point where the value of imports remained constant between 1995 and 1999. Since 2000 total imports have soared. Even excluding oil, imports increased by more than twice the growth of GDP. Notable increases have been edible oils, chemicals (plastics and pharmaceutical products), and most manufactured goods. In particular, food, telecommunication and electrical equipment, and clothing have consistently grown faster than total imports over the last decade. Fabric, steel and iron have seen accelerated growth since 2000.

Qualifying Industrial Zone (QIZ) growth and the construction boom help to explain the increased imports of fabric, steel and iron, and machinery. Privatization of Jordan Telecom and the establishment of Fastlink, MobileCom and X-Press help to explain the recent import increases of telecommunication equipment. Increases in imports of edible oils and clothing are likely driven by tariff reductions.

Regressing import demand against changes in GDP, relative prices, and estimated customs duties over the period 1984-2004 provides a statistically significant customs duty elasticity of demand for imports of -0.2. This means that a 1 percent decrease in the amount of duty paid to Customs leads to a 0.2 percent increase in the volume of imports. The elasticity is larger than the relative current and lagged price elasticity of demand for imports – neither of which were statistically significant.

**Imports under Trade Agreements**

Excluding the largest export, wheat, the top 50 exports to Jordan by value increased by 189 percent between 2001 and 2004. Imports of wheat are subject to great variation and

were already duty free before JUSFTA came into effect. Total US exports to Jordan increased by a total of 57 percent between 2001 and 2004, less than total Jordanian imports over this period (67 percent increase).

Non-oil imports have grown faster than oil imports from Arab countries[4] over the past four years and make up about 40 percent of Jordan's total imports from those partners. Food, plastics, textiles, iron and steel, aluminum and copper represent 24 percent of total imports and have been experiencing strong growth. Products most likely enjoying the greatest advantage from GAFTA-induced tariff reductions are food imports from the region. The region has a comparative advantage in food and commodities that are now enjoying their rightful place in regional trade.

It appears that the lack of significant Jordanian preferential treatment of EU imports and continuing MFN reductions for all countries has led to the declining EU share of total Jordanian imports over the past five years. In particular, EU exports of food products to Jordan have steadily declined. EU exports are now concentrated in higher value added chemicals, machinery and transport equipment.

**Part III - Impact on Business**

**Broad Indicators of Impact**

Two indicators suggest a positive impact of trade reform on the economy:

1. The wholesale price index (WPI) reflects to some degree the costs of intermediate consumption, and is expected to grow at a slower rate than GDP or the consumer price index (CPI) as liberalization reduces industrial input costs. Both WPI and CPI were growing faster than GDP in the early 1990s. However, WPI remained constant between 1994 and 1998 and actually fell between 1998 and 2002 leading to quite a remarkable gap between GDP and the CPI, and the WPI. This suggests that trade liberalization has reduced inputs costs for industry and forced producers to lower final output prices in line with competing import prices.

2. Trade liberalization acts to enhance efficient use of inputs and factors of production, i.e. labor and capital. It is important to look beyond increases in the quantity of factors of production to the quality of factor productivity. Total factor productivity (TFP) measures changes in output per unit of both capital and labor. The World Bank estimates that most of the economic growth of the period 1980-2000 could be accounted for by expansion of capital and labor, rather than improvement in productivity. In fact, TFP actually declined in the 1980s and remained constant between 1996-2000. However, the most recent values of TFP in 2001 and 2002, show productivity gains comparable to the early 1990s. This suggests that economic reforms, including trade liberalization, improved the efficiency with which capital and labor are used in production.

**Impact on Agriculture**

[4] The term "Arab countries" is used by the CBJ in its Monthly Bulletin of Statistics; no list of countries is provided.

The largest relative sectoral changes are in the traditional agriculture and mining sectors. Agriculture's share of GDP declined from 8.0 percent in 1990 to 2.3 percent in 2004. Mining declined from 6.0 percent to 2.8 percent of GDP. Agriculture's share of GDP stabilized at around 6 percent in the 1980s but reduced rapidly in 1993 to a new and stable equilibrium level of 2.4 percent in 1999. It is tempting to conclude that lower barriers to agricultural imports accelerated the reduction in agriculture's share of GDP.[5]

The index of real agricultural value added per total agricultural workers fell from 154 in 1993 to 115 in 1998-99, and subsequently increased to 146 in 2003. Employment in this sector steadily increased thereafter from 55,000 in 1993 to 75,000 in 2000 and remained relatively constant thereafter. Increasing output and constant employment have caused real agricultural output per worker to increase in 1999, and maintained agriculture's constant 2.4 percent of growing real GDP at present. Agriculture value added has increased by an average of 12.6 percent between 2001 and 2004, the highest recorded for any broad sector since 1990.

**Impact on Industry**

The following observations can be made about industry performance between 1994 and 2003 (the years for which survey data is available): [6]

- Nominal ouput of surveyed firms increased by over 50 percent; most growth has been since 1999.
- Real labor productivity increased in two steps (1998 and 2002) by a total of 20 percent over the ten-year period.
- Capital productivity steadily increased by a total of 50 percent since 1997 when measured by GVA per total fixed assets.
- Firms only marginally increased exports as a share of domestic sales between 1994 and 2003.
- Operating surplus as a share of total output for the whole sector was 14 percent in 2003. The average profit margin increased by 21 percent between 1994-96 and 2001-03.
- A weak relationship exists between increasing productivity over the period and increasing profitability.
- There is little apparent relationship between subsectors performing well and their level of remaining tariff protection from imports.

Total surveyed industrial employment increased by 30 percent over the past ten years of trade liberalization, from 109,000 in 1994 to a constant 140,000 since 2001. This is a tremendous result given early fears of a collapse of manufacturing employment following trade liberalization. Despite the healthy increase, surveyed industrial employment just kept up with growth of the labor force, maintaining an approximate 11 percent share of

[5] The correlation coefficient between the per capita GDP and agriculture's share of GDP is -0.84 between 1979 and 2003.

[6] The Department of Statistics, in its annual survey of industry, surveys oil and gas extraction, mining and quarrying, all manufacturing sectors and electricity, gas, steam and hot water supply.

the economically active population.[7] This was insufficient to have much impact on the unemployment rate.

Gross output (total sales) has generally grown at a slower rate than employment but has accelerated since 2000. This has led to modest overall growth in gross value added per worker, growth was concentrated in 2002 and 2003. Increasing GVA per employer is a measure of productivity – suggesting that capital per worker has increased or that capital and/or labor are being used more efficiently. This increase in 2002-03 is reflected in the positive value for total factor productivity value measured by the World Bank in 2001 and 2002.

Exports have grown but remain a remarkably steady 15 percent of domestic sales. Export growth in new growth areas such as apparel and pharmaceuticals has been offset by a lack of export growth in the traditional sectors of fertilizers and minerals.

Gross profit, measured by operating surplus in the survey, has followed a more volatile path with large losses in 1996 and 1998 followed by a significant rebound starting in 2000. Aggregate operating surplus almost doubled between 1999 and 2003. Operating margins have increased from 7.2 percent in 1996 to 13.5 percent in 2003.

Capital expenditure has slowed since 1997 resulting in constant total fixed assets since that year. This has increased the efficient use of plant and equipment.

How has value added been distributed between capital, labor and society?

1. Real compensation per worker has remained constant over the ten-year period, peaking at 2,037 JD in 1999. This is a real net increase of just 3.2 percent over the entire ten-year period.
2. Operating surplus per employee has shown the opposite trend: steadily declined by a total of 18 percent between 1995 and 1999 before increasing significantly by a total of 70 percent by 2003.
3. Operating surplus as a share of total fixed assets (return on assets) increased by 33 percent over the ten-year period to a significant 33.8 percent of total fixed assets. However, the total return on assets was as low as 14.2 percent in 1997.
4. Business income tax has increased but in a very inefficient manner. While operating surplus was declining in 1994-96 tax collections continued to increase. Total tax collections even surpassed total operating surplus in 1996. Thereafter, taxation has not kept pace with rising profits.

Therefore, the large increase in the average operating margin has been at the expense of both employee compensation and capital expenditure. The current increasing labor force will likely sustain low real wages, however, short-term profit taking will eventually likely reduce total factor productivity.

These results raise a number of general concerns:

[7] Economically active population represents those persons 15 years of age and over who are either employed or unemployed and seeking work. Therefore children, students, retired persons and those unable to work are excluded.

1. Constant average employee compensation has not accelerated employment growth.
2. The large rise in profitability has not been accompanied by similar increases in taxes on production as measured by DOS.
3. Fixed assets are being depreciated, which will eventually impact negatively on output.

**Group A - At Risk Manufacturing Subsectors**

The group of subsectors experiencing falling profitability and productivity is very small – only five large subsectors and seven small subsectors out of a total of 80 subsectors surveyed. Arguably all the large subsectors are capital-intensive industries relying on economies of scale for efficient production. The only one of these industries in which Jordan likely has a natural comparative advantage is the manufacture of fertilizer. This is the largest industry in Jordan outside electricity and is controlled by the Jordan Phosphate Mining Company with its exclusive right to extract and process phosphate.

**Table III. At Risk Industrial Subsectors 1994-2003**

| Subsector | 2003 Output (000 JD) | % Change Output | % 2003 Profit Margin | % Change Profit Margin | % Change GVA per Employee | % Export Growth | 2002 Tariff % |
|---|---|---|---|---|---|---|---|
| Manufacture bodies for motor | | - | 20% | 63% | -1% | - | 30% |
| Manufacture of fertilizers and | | - | -1% | - | -46% | - | 5% |
| Manufacture of pulp, paper and | | - | 6% | - | -43% | 56% | 3- |
| Manufacture of dairy products | | 113 | 4% | - | -37% | 3% | 5- |
| Manufacture of soft drinks; | | 18% | 0% | - | -23% | 1% | 30% |
| Tanning and dressing of leather | | - | -2% | - | -38% | -81% | 10% |
| Manufacture of plastics in primary | | - | 6% | - | -34% | 2% | 20% |
| Manufacture of tanks, reservoirs | | 14% | 7% | - | -29% | -2% | 30% |
| Manufacture of knitted and | | - | 9% | - | 9% | 2% | 20% |
| Quarrying of stone, sand and clay | | - | 19% | - | -8% | 4% | 30% |
| Manufacture of footwear | | - | 16% | - | -9% | 60% | 30% |
| Manufacture of structural non- | | 1% | 11% | - | -24% | 5% | 30% |
| Total Industry | 4,335 | 58% | 14% | 21% | 35% | 6% | |

Source: Derived from DOS Annual Industry Survey results 1994-2003.

Adjustment has been harder on smaller firms. Half of the group has not recovered their level of 1994 profitability. However, only two industries had average operating losses, i.e. negative average profitability in the period 2001-2003. Facing a 10 percent tariff by 2002, leather tanning has lost most of its output, profits and export sales. The tanning industry is monopolized by Jordan Tanning Company that enjoys a concession until 1998. The other subsectors enjoy relatively high tariff protection against imports.

▪ Pulp and paper production in Jordan has steadily declined since 1994. Jordanian production is suffering from imports subject to the low tariff range of 3 percent-10 percent. Imports have increased from 43 million to 86 million JD.[8]

▪ Output in the dairy industry has increased by 113 percent over the ten-year period while profitability and productivity have fallen. Capital expenditure has also been increasing over the last three years. As tariffs on dairy products continue to decline there will likely be domestic producers exiting this industry. Dairy product imports have increased from 31 million JD to 77 million JD over this period.

▪ Competition from beverage imports is driving down prices and thus productivity and profitability in these food subsectors. Imports of flavored sweetened beverages increased from 144,000 JD in 1994 to an incredible 18.4 million JD in 2003.

**Group B – Adjusting Manufacturing Subsectors**

Table IV lists subsectors that experienced declining and/or low profits while increasing output and efficiency. This group of industries has reacted to increasing competition from imports by increasing output and employee productivity, but has not recovered its former level of profitability.

**Table IV. Adjusting Industrial Subsectors 1994-2003**

| Subsector | 2003 Output (000 JD) | % Change Output | % 2003 Profit Margin | % Change Profit Margin | % Change GVA per Employee | % Export Growth | 2002 Tariff % |
|---|---|---|---|---|---|---|---|
| Production, processing and preserving of meat and products | 89,813 | 337% | 12% | -38% | 128% | 5% | 30% |
| Production, collection and distribution of electricity | 291,240 | 92% | 9% | -39% | 33% | 0% | monopoly |
| Manufacture of articles of concrete, cement and plaster | 88,308 | 79% | 12% | -28% | 45% | 2% | 30% |
| Manufacture of domestic appliances n.e.c. | 22,678 | -18% | 10% | -21% | 23% | 21% | 5-30% |
| Manufacture of bakery products | 110,933 | 73% | 14% | -12% | 22% | 1% | 30% |
| Manufacture of tobacco products | 216,156 | 101% | 2% | -46% | 63% | 23% | 70-100% |
| Printing | 36,834 | 67% | 9% | -15% | 70% | 11% | 0-30% |
| Cutting, shaping and finishing of stone | 44,665 | 38% | 20% | -6% | -8% | 14% | 30% |
| Manufacture of grain mill products | 86,513 | 112 | 6% | - | 6% | 1% | 0- |

[8] These import figures include articles made of paper such as tissues that are not included in the manufacture of pulp and paperboard category.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | % | | 13% | | | 10% |
| Manufacture of other food products n.e.c. | 47,053 | 46% | 12% | 0% | -19% | 21% | 0-30% |
| Manufacture of basic precious and non-ferrous metals | 33,314 | 77% | 22% | 17% | -35% | 43% | 20-30% |
| Total Industry | 4,335,479 | 58% | 14% | 21% | 35% | 6% | |

Source: Derived from DOS Annual Industry Survey results 1994-2003.

Some productivity increases have been significant: meat products, tobacco and printing have been able to improve value added per employee by between 63 percent and 128 percent between 1994 and 2003. However, price competition has likely impacted negatively on their profit levels. Gold manufacturers are not struggling but are included because of their decline in productivity. These firms appear to have increased employment more than output value in order to expand export production under the Generalised System of Preferences and the JUSFTA.

**Impact on Services**

Newly WTO acceding countries, such as Jordan, have committed not to raise restrictions in almost all services sectors. Out of 160 service subsectors, Jordan has listed commitments in all but 47 subsectors. Among the sectors excluded from the schedule are air, rail and road transport, cargo handling and shipping agents, postal services, integrated engineering services, dental and vetinerian services. On average newly acceding countries have committed to the same number of subsectors as developed member countries (about 103 out of a total of 160 subsectors).

Jordanian legislation provides for a large number of specific market access and national treatment restrictions on trade in services. Restrictions applicable to those sectors that Jordan has committed under GATS are described in Jordan's Schedule of Commitments. The two most common types of restrictions require Jordanian nationality for certain professions or impose a 50 percent equity cap on foreign investors.

The Central Bank of Jordan reports aggregated trade in services statistics, transport and other. Jordan engages in a large volume of cross-border trade in services and enjoys a healthy trade surplus. Transport service export earnings in 2003 represented 21 percent of total gross output of the transport sector. Other exported services represented about 8 percent of total non-transport services gross output in 2003. It appears that both Jordan's exports and imports of other services have declined since WTO accession – this is likely due to underreporting of actual values but it may suggest that WTO accession has increased the domestic provision of services within Jordan by foreign direct investors.[9]

**Performance of Entire For-Profit Service Sector**

[9] Balance of payment reporting of trade in services is in its infancy in most countries and little can be gained from interpreting these very aggregated results often based on residual data rather than actual values.

Given its more labor intensive production practices, services employed three times more workers than manufacturing in 2003. Services employment has grown faster than manufacturing employment. Similarly with manufacturing, services employment growth has stagnated since 2000. As a share of the total labor force services employment increased from about 26.7 percent in 1994 to 33.5 percent in 2000, fell to 32.8 percent in 2003. Recent slow services employment growth has not improved the rate of unemployment, remaining at 15 percent of the total labor force.

Real output actually decreased a total of 2 percent between 1996 and 1998 and then increased by 21.5 percent between 1998-2002. However, rising output has not been sufficient to increase productivity. Real gross value added per employee steadily declined until 2000 and has been constant since 2000 at about 6,400 JD. It is likely that the net decrease in real GVA per employee over the entire 1994-2003 period is about 15 percent.

How has GVA per employee been distributed between capital and labor? Real compensation per worker actually maintained a constant level during the period that GVA per worker and operating surplus declined – 1998-2000. The net increase in real compensation per worker was 27 percent over the entire ten-year period. Most of this increase occurred in 1998. On the other hand, operating surplus per worker fell from 2,860 JD in 1995 to 1,638 in 2000, and had only increased to 2,429 in 2003. In contrast to manufacturing, recent services operating surplus growth has not been at the expense of both depreciation and tax, and compensation per worker. Tax revenue appears to be increasing in line with operating profits since 2000.

Possible reasons for this more equitable distribution of the gains from recent growth include:

- Average compensation is lower in the services sector and at only about 150 JD per month is more susceptible to labor arguments to increase wages to cover cost of living increases.
- Services firms may be smaller and employees and owners may have stronger profit sharing arrangements than in manufacturing firms.
- The service sector receives less tax incentives from the government, and so an increase in profits will be taxed.
- Capital investment has not declined over the ten-year liberalization period. Total fixed assets per worker have increased from 7,000 to 8,000 JD between 1994 and 2004.

In summary, recent performance of the services sector raises the following concerns:

1. Productivity (real GVA per employee) deteriorated throughout the 1990s, and has reached a new lower equilibrium level, despite real output growth since 1998.
2. Real compensation per worker has stagnated since 1998 with little significant gain in employment.
3. Profit margins fell significantly in the 1990s but have only recovered about two-thirds of these losses since 2000.

**Performance and Liberalization**

A trade in services trade restrictive index (TRI) was derived for this study to indicate the extent to which Jordanian policy restricts trade in services. A TRI of 1 indicates total openness to cross border trade and direct foreign investment. A TRI of 4 indicates severe restrictions, generally related to a prohibition on direct foreign investment. Correlations between the TRI and service subsector performance indicators are weak, but the positive and negative signs of coefficients are in the right direction. Profit margins are more likely to have decreased and output to have increased over time in any subsector the larger the degree of liberalization of that subsector. Conversely, currently high restrictions on foreign competition are associated with decreasing output and increasing profit over time.

The report highlights the performance of the seven main service sectors (including the separation of hotels and restaurants from business services) in further detail and ranks all 65 services by profitability and productivity. Table V summarises the direction of change in some of the key performance indicators available from the DOS data for the seven service sectors. The table expands on the correlation between TRI and service performance. The results suggest that service sectors facing more competition due to market access liberalization have a more productive labor force and provide higher real wages than more protected sectors. They are also likely to invest more in fixed assets. These are important results supporting the arguments for greater liberalization of Jordan's services. In particular, transport is a vital infrastructural service for industry. Current road transport conditions impose unnecessarily high costs on the exports of goods and services.

**Table V. Changes in Key Indicators of Main Service Sectors' Performance, 1994-2003**

| | Telecom | Banking | Hotels | Business | Construct | Trade | Transp |
|---|---|---|---|---|---|---|---|
| Operating Surplus per | 0 | **+** | - | 0 | - | - | **+** |
| Real Gross Value Added per | **+** | **+** | - | - | - | - | - |
| Real Average Annual Wage | **+** | + | + | 0 | **+** | 0 | - |
| Tax and Depreciation per | **+** | 0 | **+** | 0 | 0 | + | - |
| Total Fixed Assets per | **+** | + | **+** | + | - | 0 | - |
| *Net Result* | **+** | + | **+** | 0 | - | - | - |

Source: Derived from DOS annual services survey.
Note: Symbols are in bold to show stronger movement in the indicated direction.

**Group A - Profitable and Protected Service Subsectors**[10]

Table VI lists those individual subsectors with high profit margins that have not improved efficiency significantly.

**Table VI Profitable and Protected Service Subsectors**

| Subsector | 2003 Output (000JD) | % Change in Output | 2003 Profit Margin | % Change in Profit Margin | % Change in GVA per Employee | |
|---|---|---|---|---|---|---|
| Freight transport by road | 229,929 | 82% | 46% | 125% | -17% | |
| Other scheduled, non-scheduled | 299,106 | 53% | 46% | 9% | 14% | |
| Retail sale of second-hand goods in | 13,458 | 76% | 43% | -19% | -22% | |
| Non-specialized retail trade in stores | 106,111 | -1% | 46% | -21% | -20% | |
| Retail sale of food, beverages, tobacco | 60,268 | 88% | 47% | -26% | -5% | |
| Sale, repair of motor vehicles, retail sale | 148,431 | 40% | 39% | -28% | 13% | |
| Retail trade not in stores | 1,381 | -37% | 50% | -32% | -63% | |
| Other retail trade of new goods in | 208,551 | 11% | 35% | -39% | -25% | |
| Real estate activities with own or leased | 20,013 | 361% | 28% | -43% | -12% | |
| Sea and coastal water transport | 20,586 | -20% | 24% | -16% | -38% | |

Source: DOS Annual Services Survey 1994-2003.

Not surprisingly, transport and retail trade are the most protected service sectors in the country and have restructured the least. Road freight transport suffered falling fixed asset values, falling efficiency in terms of GVA per employee and rising profitability. The operating margin more than doubled (increasing by 125 percent) to 46 percent in 2003, almost twice the services sector average. Passenger land transport is the third largest subsector after telecommunication and building. No real improvement in GVA per employee while the profit margin increased to 46 percent.

Retail trade has enjoyed similar high profits and declining efficiency. All but one retail subsector enjoyed increased profitability and declining productivity. Specialized and non-specialized retail trade both experienced modest increases in output, high profit margins (35 percent and 46 percent of output respectiviely) and falling GVA per employee (-25 percent and -20 percent respectively).

**Group B - Adjusting Firms – Improving Productivity, Low Profitability**

Table VII lists those subsectors that experienced falling profit margins resulting in low profit margins in 2003 while increasing GVA per employer between 1994 and 2003. The table includes subsectors competing with the public sector, i.e. health, education services and postal services, and also construction related services.

[10] Given that real GVA per worker, as measured by the DOS GDP data series, decreased by about 15% then only nominal increases greater than 15% from the survey data should be considered a positive productivity gain.

**Table VII Adjusting Service Subsectors**

| Subsector | 2003 Output (000JD) | % Change in Output | 2003 Profit Margin | % Ch in Pr Ma | |
|---|---|---|---|---|---|
| Labour recruitment and provision of personnel | 291 | 2347% | -8% | -1 | |
| Motion picture and video production and distribution | 12,643 | 635% | -1% | -8 | |
| Advertising | 14,910 | 205% | 12% | -5 | |
| Veterinary activities | 206 | 187% | 14% | -4 | |
| Other recreational activities | 7,563 | 272% | 13% | -1 | |
| Transport via railways | 8,031 | 4% | -2% | -8 | |
| Scheduled and non-scheduled air transport | 276,159 | -4% | 3% | -5 | |
| Hospital activities | 104,695 | 295% | 2% | -8 | |
| National post activities | 9,963 | 43% | -28% | -2 | |
| Building-cleaning activities | 10,389 | 205% | -3% | -1 | |
| General secondary education | 56,409 | 143% | 9% | -7 | |
| Other human health activities | 7,106 | 189% | 16% | -1 | |
| Other entertainment activities n.e.c. | 6,018 | 71% | 7% | -6 | |
| Activities of travel agencies and tour operators | 45,618 | 428% | 8% | -7 | |
| Primary education | 30,160 | 95% | 11% | -1 | |
| Building installation | 134,886 | 454% | 9% | -4 | |
| Building complete constructions, parts; civil engineering | 311,258 | 2% | 5% | -3 | |
| Hotels; camping sites, other short-stay accommodation | 113,776 | 69% | -10% | -1 | |

Source: DOS Annual Services Survey 1994-2003.

The two transport subsectors that are almost fully liberalized, rail and air transport, are on the list. Local airlines (dominated by Royal Jordanian Airlines) and the two rail operations in the Kingdom have not increased output over the ten-years under study. Rail operational surplus declined to -66 percent of output in 2000. Air transport services experienced negative or low profitability during 2001-2003 after the intifada and conflict in Iraq. However, both subsectors have each halved their workforce and halved the value of their total fixed assets increasing productivity by 50 percent.

The national post and courier services increased output by 48 percent and trimmed their workforce to increase productivity by 38 percent. However, profit is still elusive. A positive operating margin was achieved only in 1998. The large increase in fixed assets represents a 14 million JD increase for 2003.

Private hospitals enjoyed a 300 percent increase in output while managing to just double their workforce. However, profits continued to fall over the entire ten-year period. Even ignoring an unusually hight operating surplus in 1994, profitability has dropped by a total of 33 percent over the entire ten-year perid.

Private education, both primary and secondary, has enjoyed output growth of 100 percent or more. In particular, secondary teaching has become 30 percent more efficient in terms

of labor productivity. Both subsectors experienced a slump in profitability in the period 1999-2001, but have managed to recover the levels of 1994 and 1995.

Finally the construction sector has enjoyed significant output growth yet profitability has declined while real productivity has likely decreased. Employment and average compensation have been sustained at the expense of operating profits. The resulting operating margins of between 5 percent-10 percent of output may be appropriate for such an industry.

Mention should be made of the hotel industry which has been suffering steadily declining profits over the entire ten-year period. Although, exacerbated recently by regional conflict, increasing new hotel development has led to rising employment numbers and has bid up average compensation. However, modest output growth has meant falling GVA per employee and record profit losses in 2003. Minimum staff numbers per hotel restrict the ability of this industry to improve labor productivity.

**Group C - Profitable and Productive Service Subsectors**

Table VIII lists subsectors that have improved both profitability and productivity over the ten-year period.

**Table VIII Sevice Subsectors Experiencing Improved Profitability and Productivity**

| Subsector | 2003 Output (000JD) | % Change in Output | 2003 Profit Margin | % Change in Profit Margin | % Change in GVA per Employee | % C in Fi A |
|---|---|---|---|---|---|---|
| Renting of construction, civil engineering machinery | 1,458 | 601% | 74% | 153% | 370% | 19 |
| Storage and warehousing | 18,541 | 354% | 46% | 1107% | 255% | 14 |
| Activities of other transport agencies | 183,434 | 2269% | 49% | 44% | 186% | 64 |
| Renting of land transport equipment | 9,219 | 148% | 23% | 31% | 175% | 72 |
| Market research and public opinion polling | 226 | 348% | 19% | 140% | 166% | -2 |
| Other service activities n.e.c. | 337 | 831% | 22% | 73% | 108% | 10 |
| Higher education | 95,061 | 302% | 29% | 15% | 90% | 13 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Cargo/passenger handling/brokerage services facilities | 191,529 | 190% | 47% | 42% | 86% | -4 |
| Architectural, engineering activities, related consultancy | 34,646 | 105% | 26% | 29% | 80% | 5 |
| Business and management consultancy activities | 5,676 | 336% | 31% | 37% | 59% | 3 |
| Restaurants, bars and canteens | 125,369 | 48% | 21% | 13% | 58% | 2 |

Source: DOS Annual Services Survey 1994-2003.

Some of the improvement is due to regulatory liberalization, e.g. in higher education and warehousing. Servicing booming sectors is a more likely reason for their success, e.g. the rising volume of international trade. Activities of other transport agencies include freight forwarders and customs brokers, renting of land transport equipment, storage and warehousing. Output has grown in response to the increasing volume of international trade. Architecutural and engineering services and the renting of construction machinery and has benefited from the housing boom.

## Introduction

This report seeks to compare Jordan's trade liberalization path with industry performance over the ten-year period 1994-2003. Part I examines the reduction of import barriers in Jordan over time and their impact on imports. Part II examines the profitability and productivity of manufacturing and service sectors using survey data from the Department of Statistics. The report serves a number of purposes:

1. It has been over 15 years since the Government began to lower customs duties and over five years since Jordan joined the World Trade Organization (WTO). The Government is negotiating new trade liberalization measures, bilaterally with Turkey and Canada, and multilaterally within the WTO Doha Round. It is useful to look back over the performance of industry responding to these major structural changes in order to gauge the readiness of industry for further trade liberalization, and to start planning future policies.
2. A new policy monitoring agency, the Jordan Authority for Enterprise Development (JAED), is being currently established by the Government. JAED will review enterprise, investment and trade policy. One of its first tasks will be to develop the National Agenda goals into specific strategies, in particular, setting the direction for trade policy.
3. The Foreign Trade Policy Directorate of the Ministry of Industry and Trade (MIT) is working with the United Nations Conference of Trade and Development (UNCTAD) to examine trade in services and support Jordanian service exporters. This report provides some background on the impact of liberalization of trade in services on Jordanian service providers.
4. Finally, the report raises a number of issues that could be studied by JAED and other policy makers in Jordan. The report also identifies information gaps that MIT could research before it works with the WTO on Jordan's Trade Policy Review next year.

It is not possible to isolate the influence of changing trade policy from other macroeconomic and microeconomic reforms implemented by the Government since 1989. Price and exchange rate stability provided considerable investment planning certainty to businesses by the mid-1990s. Financial market reform and public debt reductions have lowered the cost of capital for businesses. Terminating monopoly concessions over key infrastructural and natural resource sectors have encouraged competition and productivity increases. Trade policy reform has added to these reforms by increasing competition in the goods and services sectors and increasing access to foreign markets.

This report does not trace the effects of all the different policy reforms implemented since 1989. Readers are referred to various World Bank and International Monetary Fund (IMF) country reports on Jordan for a discussion of these reforms. This study takes advantage of ten years of Department of Statistics survey data to examine the extent to which import liberalization has increased productivity in Jordanian manufacturing and service industries.

# Part I Path of Trade Liberalization in Jordan

## 1.1 Empirical Observations on Trade Liberalization

The gains from trade openness arise from countries trading goods and services based on their comparative advantage. That is, countries produce and export goods using their relatively abundant resources and factors of production, i.e. least cost resources. Trade barriers reduce the net gain to each trading partner. However, tariffs and quantitative restrictions have been used historically by all countries to raise revenue and protect infant or sensitive industries. Experience has shown that countries can benefit from trade liberalization while raising revenue and supporting industry by other non-trade distorting means. The trade liberalization adjustment path involves short-term costs in order to gain the long-term benefits.

1) Costs of Liberalization: As import barriers are lowered domestic import competing producers face downward pressure on profits and sales. Unless the producer can find new protected markets or substantially improve productivity through investment in new production techniques, returns to factors of production, i.e. workers and capital, will be under downward pressure. Capital and labor will eventually leave the industry.
2) Consumption Benefits of Liberalization: Consumers enjoy lower prices (and increased quality and variety of products) and thus derive an increase in their disposable income. They expand their consumption of other goods and services. Local producers of these goods and services expand their sales.
3) Production Benefits of Liberalization: Firms relying on imported inputs and services competing with imported services enjoy lower production costs. Moreover, depending on the extent of decline in import-competing industries, the cost of labor and capital may adjust downwards. Firms working in areas of comparative advantage to the country can hire the displaced capital and labor for more productive purposes. Finally, greater access to foreign markets boosts sales and profits.

The WTO recently commissioned a literature review of the impact of trade liberalization, whose findings are useful to repeat:[11]

1) Existing studies find that the benefits from trade exceed adjustment costs not only in the long run, where the cost to benefit ratio is estimated to be lower than four percent, but even during the adjustment period. A World Bank study of the impact of trade liberalization in developing countries found that manufacturing employment was actually higher in eight out of nine countries studied during and only one year after the liberalization period.[12]

[11] Marc Bacchetta and Marion Jansen, *Adjusting to Trade Liberalization*, Special Study 7, WTO, April 2003.
[12] Demetrios Papageorgiou, Armeane Choksi and Michael Michaely, *Liberalizing Foreign Trade in Developing Countries: The Lessons and Experience*, World Bank, 1990.

2) Institutions in developing countries can alleviate short run adjustment costs. Flexible labor and credit markets and social safety nets are very important to ensuring a smooth transition.
3) Long-term trends in the relative shares of agriculture, manufacturing and services in national output have remained stable over the past 40 years, reflecting long-run patterns of rising per capita income rather than trade openness. The declining share of manufacturing output in OECD countries is mainly due to their relatively greater level of technological change and productivity gains compared with services. Services have enjoyed lower productivity gains and hence higher relative prices. It is likely, however, that the preference for lowering tariff rates rather than barriers to trade in services over the past fifty years has increased competition more in the manufacturing sector than in the services sector.
4) More interestingly, those developing countries for which sufficient data was available have undergone less structural change after a period of trade liberalization than before that period. In Chile, Colombia, Israel and Philippines, changes in the share of total value added for nine manufacturing sub-sectors declined in the seven-year period after liberalization more than in the seven-year period before liberalization. The reason for this needs further research and the WTO authors suggest it could be that trade reform smooths the process of reform or that the reform process was well anticipated by manufacturers.

What does this all mean for Jordan?

We can draw at few predictions for Jordan from this discussion. At the most basic level, prices of traded goods and services will fall and demand will rise. Competing local manufacturers will likely remain competitive as long as they can adjust their profit expectations and/or adjust wages and intermediate costs downwards. In the long run if investors and workers will not accept the lower returns they will leave the industry. Price changes on final consumer products will be greatest given their higher level of pre-reform tariff rates and also given that the tariffs are applied to the whole cost of the product. Lower-priced imported intermediate products will lower costs of production and may enable more firms to export competitively.

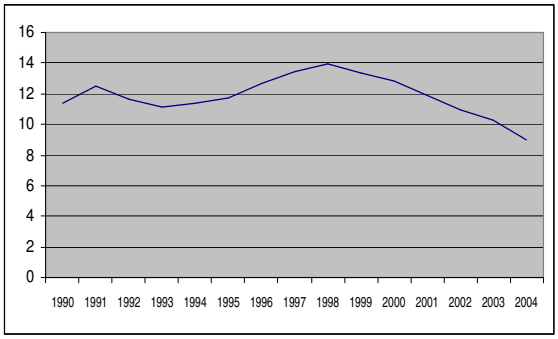
In summary, we would expect to see wages and profits adjusting downwards in the short-term as output declines due to increasing competition for rising imports. Productivity is likely to decline with output as employment is slower to adjust. In the long-term new investment in more efficient plant and equipment and production techniques, lower imported intermediate costs, new export markets and slower recruitment should increase output, productivity and profitability. The net impact on real wages is uncertain. Increasing productivity should translate into higher real wages, but the high rate of growth of the labor force is likely to keep downward pressure on real wages.

Looking at the WTO findings, we can expect long-term shifts in GDP sectoral shares to persist throughout Jordan's period of adjustment. However, given the higher levels of protection that agriculture and manufacturing have enjoyed in Jordan compared with many labor intensive services, further adjustments in agriculture and manufacturing output are likely. Secondly, with Jordan's relatively flexible labor and credit markets,

short-term employment losses are likely to be minimized. However, the rapid growth of Jordan's labor force will place downward pressure on employment during the transition.

In addition to these trade reform-induced adjustments, industry in Jordan was subject to other, perhaps more influential, economic pressures during the period of this study. The World Bank highlights two of these pressures[13]. Jordan needs to generate 40,000-50,000 new jobs per year to absorb the new entrants to the labor force. This represents about 1 percent of the population – a considerable hurdle for the private sector. Secondly, non-residential private investment collapsed in the 1980s and has yet to recover its 20 percent of GDP peak from 1981. Between 1989 and 1995 it hovered around 5 percent of GDP and only climbed to 7 percent by 1998. In order to attain GDP annual growth of over 5 percent, private investment should rise above 15 percent of GDP a year.

Figure 1 Licensed Bank Discounted Bill and Bond Rate




A factor causing the slow growth of private investment in the 1990s was the relatively high level of local interest rates. Bill and bond rates on facilities provided by local banks peaked at 14 percent in 1998. This rise in rates in the 1990s coincides with a relative fall in sales, profitability and capital investment revealed by DOS survey data in both manufacturing and service firms.

Source: CBJ Annual Statistical Series, Table 22, 1990-2004.

### 1.2 Elements of Trade Liberalization in Jordan

Jordan began reforming its international trade regime in 1989 under World Bank assistance to restore macroeconomic stability and liberalize the economy. The import weighted average tariff was reduced from 34.4 percent with 26 percent dispersion in 1989 to 25 percent in 1992. In November 1994 the maximum tariff was reduced to 50 percent (excluding fees and surcharges) except on alcohol, tobacco and motor cars. The plethora of tariff bands was consolidated from 24 to ten tariff bands. Tariffs on 492 capital goods at the 8-digit HS level were reduced to a three band tariff structure (0 percent, 5 percent, and 10 percent).

In conjunction with further World Bank lending, the Government of Jordan implemented more reforms by the end of the 1996. Tariffs on the 492 capital goods were reduced to zero, and a maximum tariff of 10 percent placed on an additional list of 218 capital goods. The maximum tariff including fees and surcharges was reduced from 70 percent to 50 percent on all goods including cars, supplemented by a new excise tax on cars. With effect from 1 January 1997, the ten band tariff rate structure was consolidated to six

[13] *Jordan Development Policy Review – A Reforming State in a Volatile Region*, World Bank, Nov. 2, 2002, 19.

bands (0%, 5%, 10%, 20%, 30% and a maximum of rate of 40%). All capital goods were to be zero-rated. The 40 percent maximum tariff was further reduced to 35 percent in September 1999.

The Government also eliminated over five different ad valorem fees and surcharges on imported goods in 1997. These additional costs could total over 20 percent of the value of the imported good.[14] After accession to the WTO the Government also eliminated the requirement for consular certification of commercial bills in the exporting country. Jordan committed to the Working Group that any fees charged after accession would be commensurate of the service provided.

### 1.2.1 Tariff Exemptions

The volume of imports that was exempt from customs duties frustrated the revenue function of duties and emphasized the inefficient and inequitable nature of Jordan's trade policy at the time. In the late 1980s exemptions were equivalent to 51 percent of total imports.[15] In the first eight months of 1994 the World Bank estimated that 30 percent of total imports were exempt from duties. Imports by the following institutions were exempt from import duties (with share of total imports Jan-Aug 1994):

- Government-owned enterprises and departments (about 10 percent of total imports)
- the Royal Court, armed forces, diplomatic corps, charities and international development organizations (about 3 percent of total imports)
- exporters, investors receiving incentives under the Investment Promotion Law, and certain trade specified in bilateral trade agreements (about 7 percent of total imports)
- ten privately and publicly owned organizations under statutory concessions. The exemptions terminate when the concessions expire. Currently the Arab Potash Company (until 2058), the Arab Bridge Maritime Company (until 2035), the Jordan Petroleum Refinery Company (until 2008), and the Irbid and Jordan Electric Power Companies (until 2011 and 2012 respectively) continue to enjoy duty exemptions. N.B. Cars, stationery, computers, air-conditioners, hand tools, goods used for housing employees and consumption goods are not exempt (about 10 percent of total imports).

According to the World Bank, in 1995 the Government removed duty exemptions enjoyed by the first group above, i.e. government enterprises and agencies. The impact of removing these exemptions on the organizations affected was minimized by reducing tariffs to 5-10 percent on those imports where exemptions accounted for more than 66 percent of their total import value. Exemptions from import duties now account for about 15 percent of total imports according to the World Bank.[16]

[14] World Bank Aide Memoire, *Trade Policy Adjustment Loan Appraisal Mission*, June 30-July 20, 1995; World Bank Aide Memoire, *Second Phase of Economic Reform and Development Loan*, July 18, 1996; WTO Accession Report, p. 13.

[15] WB 2004, p. 21.
[16] WB 2004 p. 21.

Given the Government's fiscal deficit and indebtedness, continuing to exempt certain groups from import duties foregoes revenue and imposes higher administrative costs on the Customs Department. Any exemption program leads to unintended leakages. Furthermore, as tariffs decline, removing exemptions imposes less additional cost imposed on the formerly exempt importers. The government could address exemptions as part of its review of investment incentives.

### 1.2.2 Import Licensing

About 40 percent of imports were controlled by some form of non-tariff barrier in 1989, generally an import license. Many of these licenses were needed to monitor imports subject to quantitative restrictions under bilateral trade agreements with neighbouring countries, or for reasons of health and security. However, remaining licenses act as an unnecessary barrier to trade. Eliminating unnecessary import licenses was a slow process in Jordan despite a new law in 1992 and the drafting of regulations in 1993. After a series of questions from WTO members of the Accession Working Party, the Government committed to reforming its licensing regime and developed a new list of goods to be subject to automatic and non-automatic import licenses compliant with the WTO Import Licensing Agreement. The published list is relatively brief and has been applied since WTO accession. However, it appears that in practice the Ministry of Industry and Trade requires licenses for a longer list of products than has been notified to the WTO.

The WTO licensing agreement seeks to limit the use of licenses to situations where they are necessary and to require transparent and accountable administration of licenses. Non-automatic licenses are required when goods are dangerous, may affect public security or to monitor quantitative restrictions on imports. If countries want to issue licenses for other purposes then they are to be issued automatically (without discretion to reject) and quickly. Such automatic licenses are for purposes that cannot be achieved in a more appropriate administrative manner. Jordan stated that it would require automatic licenses for statistical and administrative purposes and if required under its trade protocols.[17]

The Government enacted a new licensing law in 2001. The law goes further than the WTO licensing agreement by requiring importers that do not need to apply for a license shall possess an annual import permit issued by the Ministry of Industry and Trade. Jordan's representative told the Working Party Committee that the permit was necessary for statistical purposes and applications were not refused[18]. However, a penalty tariff of 5 percent was imposed at the time if the importer did not present a valid permit. Members questioned the import permit system. Given that importers must register with the Customs Department and all shipments are processed through ASYCUDA it would seem unnecessary for the Ministry to keep a duplicate record of importers. Research undertaken as part of an information study of the MIT under AMIR 1.0 indicated that the *information generated from issuing licenses does not appear to serve any decision-*

[17] *Report of the Working Party on the Accession of The Hashemite Kingdom of Jordan to the WTO*, 3 December 1999 WT/ACC/JOR/33, para.85.
[18] ibid footnote 17, paragraphs 48 and 51 of the Report.

*making or strategic purpose, since after the process is complete it is not known whether an importer actually imported goods*.[19]

In mid-2005, Cabinet approved a new draft licensing regulation replacing the existing 1993 regulation. Officials are now working on an instruction authorising which imports require a license. If licenses are required for an uncertain number of imports then now is the time for agencies to work together to rationalize the list – based on the agreed principles of health and environmental considerations.[20]

### 1.2.3 Tariff Liberalization Targets

In mid 1995, the World Bank encouraged the Government to adopt and publicize a long-term tariff reduction target of 10 percent by 2000. The purpose was "to further strengthen the credibility of Jordan's trade liberalization efforts, and signal to the private sector the future trade and investment environment so that they could factor this into their current investment decisions."[21] The Bank offered to provide further balance of payments support for this purpose. The Government had already demonstrated at that time its continuing commitment to liberalization by announcing its intention to accede to the WTO and begin free trade negotiations with the European Union. However, the Government was concerned that such unilateral liberalization would restrict its negotiating strength during accession talks with WTO members. The Government did agree to a publicly announced tariff reduction target over a much longer time frame (eight to ten years).

There are few benefits from retaining tariff barriers on imports, compared with the additional costs that tariffs impose on the whole economy. Revenue is more efficiently raised through a value-added tax. Vulnerable sectors are more efficiently protected by carefully targeted and time-bound subsidies permitted within the WTO framework. One remaining reason why many countries retain tariffs is to induce their trading partners to enter into preferential trade arrangements, and so provide greater market access for their own exports.

It is difficult to assess the degree to which the chance of gaining preferential entry into Jordan's market encouraged countries to conduct multilateral or bilateral trade negotiations with Jordan. Given Jordan's small population and low income it is likely that only its neighbors and smaller, more distant countries would enter into a preferential trading arrangement with Jordan merely to obtain greater access to Jordan's market. Furthermore, given that Jordan has already secured agreements with its major trading partners under AFTA, JUSFTA or EUAA there is little reason for Jordan to continue maintaining import tariffs. Economic theory is unanimous that unilateral liberalization is beneficial for any country.[22]

---

[19], *Trade and Investment Information Systems in Jordan*, prepared by Greta Boye and Hana Uraidi-Hammudeh for the AMIR Program, June 2001.

[20]For a discussion of import licensing reform in Jordan, see *Comments on Draft Import and Export Regulations*, prepared by by Geoff Wright for the AMIR Program, December 2003.

[21] Aide Memoire, 1995, page 5.

[22] For a further discussion of the merits of unilateral liberalization, see *Developing a Strategy for Jordan in the WTO NAMA Negotiations,* prepared by by Jim Robertson for the AMIR Program, March 2005.

### 1.2.4 WTO Accession

Commitments to further trade reforms continued under Jordan's accession to the WTO. WTO membership does not necessarily involve greater trade liberalization. The WTO acts as a forum for negotiations to reduce market access barriers, but it also is a dispute settlement body enforcing more transparent and equitable rules for conducting trade.

Some of the main implementation consequences of joining the WTO involve:[23]

1) committing the Government to a ten-year schedule of declining tariff ceilings;
2) committing the Government to a set of market access measures for trade in services;
3) removing quantitative restrictions on imports;
4) removing price controls and eliminating state trading monopolies;
5) eliminating export subsidies;
6) administering rules for customs valuation, classification and fees;
7) administering rules for pre-shipment inspections and import licensing;
8) administering rules for creating and enforcing health and quality standards on imports;
9) administering rules for enforcing antidumping, safeguard and countervailing duty; measures; and
10) administering rules for creating and enforcing patent, trademark and copyright protection.

Of these measures, it is the first two measures that will be the focus of this report. Jordan's commitments regarding tariff binding and trade in services directly affect the volume of trade in goods and services. The report will also address liberalization of agricultural imports formerly subject to quantitative restrictions.

### 1.2.5 Export Subsidies

Removal of Jordanian export subsidies is unlikely to affect the volume of trade. There have been three main forms of subsidy to exporters in Jordan. From 1980, until being discontinued at the end of 2002, the Central Bank refinanced export credits at a 2 percent discount to the prevailing interest rate. The estimated total value of the subsidy facility was only JD 10 million in 1995, representing 1.8% of total licensed bank credit to the industry, mining and agriculture sectors.

Most exporters currently enjoy two other subsidies: an income tax exemption on their profits and a refund of customs duties under a duty drawback scheme. In 1994 Cabinet exempted profits on all exports (except phosphate and potash) to non-protocol countries and territories from income tax, i.e. all countries and territories except Israel, Lebanon, Palestinian Authority and Saudi Arabia. Although the Government discontinued the Central Bank refinancing program, it is maintaining its duty and income tax exemptions for exporters until 31 December 2005.[24] However, the Government is continuing to reduce tariffs on industrial inputs, thereby minimizing the adverse impact of eliminating

[23] In order to meet these rules the Government of Jordan had to enact or amend 16 laws and approve over 30 bylaws, instructions or Cabinet decisions and implement 60 other policy changes. In addition the Government has to notify the WTO of changes to any of 40 different administrative actions.

[24] Note from Jordan to the WTO Committee on Subsidies and Countervailing Duties, G/SCM/79/Add.2, 16 November 2004.

the duty drawback scheme. In March 2005 Customs announced the removal of tariffs on over 240 intermediate goods used predominantly in the garment industry.

Removing tariffs from all capital and intermediate goods will level the playing field for all manufacturers and services in Jordan. The Government is now reviewing current investment incentives. Removing import duty and income tax exemptions could ideally satisfy both WTO rules and economic principles based on empirical research showing the ineffectiveness of tax exemptions to attract foreign investment. However, the Government will have to address the expectations of exporters operating under existing incentive arrangements carefully.

### 1.2.6 Price Controls

During the 1980s, the Government provided food subsidies in order to address poverty concerns. Declining poverty levels led to the elimination of subsidies in 1986. However, the 1989 economic crisis prompted the Government to reintroduce price controls on basic goods and services consumed by households in an attempt to alleviate rising poverty. The former Ministry of Supply imported controlled foodstuffs at market prices and distributed the goods at lower prices commensurate with household income. The difference in prices equated to the Government subsidy. In 1989 food subsidies made up 7 percent of total government expenditure (3.3 percent of GDP.)[25]

In addition to the fiscal cost, the IMF noted that the combination of high demand caused by subsidized prices and willingness of the Government to supply any quantity demanded, resulted in reduced demand for substitute foodstuffs. Moreover, wheat and flour subsidies generally benefited high income families who consume proportionally more bread than low-income families.

In response to these issues, in 1991 the Government replaced the direct subsidy with a coupon system managed by the Ministry of Supply. In 1994, coupons were only made available to families with incomes below 500 JD per month. In 1996, the Government removed subsidies from a number of products, including fresh and chilled meat, rice, sugar, olive oil, sorghum and maize. The bread subsidy was replaced with a special universal cash payment from the Ministry of Finance. In 1997 the food coupon system was replaced by its own cash transfer targeted to families earning less than 500 JD per month.[26] All cash transfers were eventually managed by a strengthened National Aid Fund (NAF) established in 1986 to provide target cash assistance to unemployable low income families. The Fund activities dispersed JD 47 million to 67,000 beneficiaries in 2003.

In 1999 the following goods and services were still subject to price controls:

- Chickpea seeds (fixed price)
- Lentil seeds (fixed price)
- Fresh cow milk (price cap)
- Yoghurt (price cap)
- Houmos (price cap)

[25] IMF, 2004, paragraph 158.
[26] World Bank 2001, *Poverty Alleviation in Jordan: Lessons for the Future*, Box 1, p. 16.

- Foul (price cap)
- Falafel (price cap)
- Barley seeds (price cap)
- Private health services
- Money exchange
- Certain banking services
- Securities dealers' commissions
- Legal services
- Hotel rates
- Restaurants at hotels
- Tour packages
- Flour (fixed price)
- Bread (fixed price – liberalized Dec 1999)
- Municipal water supply (fixed price)
- Electricity distribution (fixed price)
- Natural gas distribution (fixed price)
- Petroleum products (fixed price)
- Cement (fixed price)
- Transport of goods and passengers (fixed price)
- Public health services (fixed price)
- Travel agent ticketing services (fixed price)
- Car insurance (fixed price)
- Medicine (17 percent profit over sales for retailer)

Jordan informed WTO members that its price controls were not inconsistent with MFN or national treatment principles, and Jordan would continue to apply the controls after accession. The impact of price liberalization depends upon the effect that each price control had on trade and competition. Too low a price would discourage supply while too high a price would discourage demand. The fixed rate of profit applied to retail drug sales appears to have led to the peculiar Jordanian phenomenon of a pharmacist on every street corner.

### 1.3 Evolution of Tariff Reductions

Table 1 seeks to bring together estimates of tariff changes over the past ten years. These tariff changes apply to imports from all countries. The changes were made unilaterally by Jordan before 2000, and then according to its WTO accession tariff reduction program agreed with WTO member countries. Customs does not retain tariff schedules from years before 2000. The two right hand columns describe the tariff commitments targets in 2005 and 2010 made by Jordan upon accession to the WTO.

As discussed above the number of tariff bands was reduced from 24 to 6, and the maximum tariff reduced from 220 percent to 40 percent before Jordan joined the WTO. Since joining the maximum rate has been lowered to 30 percent and number of duty free line items has doubled to represent almost half of all potential imports. The trade-

weighted average tariff has been reduced from 21 percent in 1994 to 13 percent in 2002.[27] In particular, the trade-weighted average tariff on intermediate goods has been reduced from 20 percent in 1998 to under 5 percent in 2003. Average weighted tariffs on agricultural and consumer goods have halved.

Table 1 Evolution of MFN Tariff Reductions in Jordan, 1994-2010

| | Applied Tariff | | | | | | | Bound Tariff | |
|---|---|---|---|---|---|---|---|---|---|
| | 1994 | 1996 | 1998 | Jun 2000 | 2002 | July 2004 | May 2005 | 2005 | 2 |
| Simple Average Tariff | 29.0 % | 26.5% | 24.4 % | 15.9% | 15.3 % | 12.8% | 11.7% | 17.4 % | 1 % |
| Standard deviation | 22.7 | 21.5 | 16.4 | 14.8 | 15.2 | 15.7 | 15.3% | | |
| Import-Weighted Average Tariff | 20.8 % | 19.8% | 16.3 % | 13.4% | 13.0 % | | | | |
| Number of Main Bands | 24 | 10 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Maximum tariff (not alcohol/tobacco) | 220. 0% | 50%+ 20% | 40.0 % | 30.0% | 30.0 % | 30.0% | 30.0% | 30.0 % | 3 % |
| Share of tariff lines at 30% or more | NA | NA | NA | 39.0% | 33.2 % | 33.0% | 20.6% | 23.5 % | 2 % |
| Share of tariff lines 15%-29% | NA | NA | NA | 4.9% | 7.8% | 5.9% | 16.4% | 30.8 % | 3 % |
| Share of tariff lines 1%-14% | NA | NA | NA | 38.5% | 38.9 % | 18.5% | 16.2% | 38.6 % | 3 % |
| Share of tariff lines that are duty free | NA | NA | NA | 17.6% | 20.1 % | 42.6% | 47.0% | 7.1% | 8 |
| Capital Goods ** | 4.6% | 4.6% | 4.6% | | 4.4% * | | 9.2% simple | | |
| Intermediate Goods ** | 22.6 % | 19.7% | 19.8 % | | 4.4% * | | | | |
| Consumer Goods ** | 35.1 % | 30.5% | 23.2 % | | 14.1 %* | | | | |
| Minerals and Mining ** | 1.0% | 1.0% | 0.9% | | 0.9% * | | | | |
| Agriculture Wgtd Avg ** | 9.2% | 8.3% | 7.8% | | 4.5% * | | 16.0% simple (ad val only) | | |

Source: Values for 2000-2005 are calculated from tariff schedules provided by the Customs Department. Values for 1994 and 1996 are from World Bank (1996) where 1996 corresponds to the Proposed First Tranche and 1998 corresponds to the Proposed Second Tranche and World Bank (2002). The 2005 and 2010 bound values are from

[27] note that excluding alcohol and tobacco products from these calculations only reduces the trade-weighted average tariff to 12.7% in 2002.

Farhat (2000) in Annex 1 of this report. The weighted average tariff for 2000 is calculated from the WTO Integrated Database, 2002.
Notes: *The weighted average for capital, intermediate, consumer and mineral products is for 2003 (capital goods = Harmonized System (HS) 84-86, 88-89, intermediate goods = HS 28-40, 44-60, 68, 70, 72-82. consumer goods = HS 16-24, 61-67, 69, 83 and 90-97, mineral = HS 25-27, agriculture = HS 01-15) ; ** refers to the trade-weighted average tariff.

The Customs Department published its new 2005 tariff schedule in June. The number of tariff product lines subject to 30 percent tariffs was reduced to below the target number agreed with WTO members upon accession.[28]

It is interesting to note that tariffs on minerals and mining were immediately reduced to a one percent average trade weighted tariff under the World Bank program. The Government clearly agreed that tariffs on imported inputs for this important export industry would unnecessarily distort their cost structure.

### 1.3.1 WTO Accession Tariff Reduction Program 2000 – 2010

Upon accession to the WTO, Jordan committed to reducing tariffs according to a published schedule over a ten year period. Jordan is currently half-way through this staged reduction. WTO members commit to a schedule of maximum or ceiling tariffs (called the bound rate), above which they commit not to increase their applied tariffs. Members are free to lower and raise tariffs within this ceiling. Countries are permitted to join the WTO once existing members are satisfied that the joining country has agreed to bind its tariffs to acceptable levels.

Upon joining, Jordan lowered the maximum rate from 35 percent to 30 percent on all but 50 products.[29] The most significant element of the program was Jordan's commitment to reduce the number of lines subject to the maximum rate of 30 percent from about half of the total number of tariff lines to less than a quarter. Jordan has already reached its 2010 target. However, the overall tariff reduction targets are more modest compared to the low tariffs that Jordan was already applying in 2000. When Jordan joined the WTO its simple average applied tariff was 17.3 percent, its simple average bound target rate in 2010 is 16.3 percent. Fortunately, the Government is not limiting itself to this modest target; the simple average tariff in 2005 is already 11.7 percent.

Annex 1 sets out the simple average bound rates for each HS Chapter in 2000, 2005 and 2010. The majority of bound tariff reductions were due to take effect by March 2005. The new WTO compliant tariff schedule is dated 16 May 2005 and was published in English on the Customs Department website in June. The most significant average bound tariff reductions include the following product categories: pharmaceuticals, photographic or cinematographic goods, miscellaneous chemical products, and plastic and articles.

[28] There may be products currently subject to 30% tariffs that will enjoy further tariff reductions in order to meet the 2010 bound tariff rate under the WTO accession schedule.
[29] These products comprise tobacco and alcohol products.

- In addition, the average bound tariff rates of 21 chapters will decrease by between 25 and 50 percent of their 2000 applied rates by 2010, including dairy products, inorganic and organic chemicals, cotton, and apparel.[30]

- The average bound tariff rates of 36 chapters will decrease by between 11 and 25 percent of their 2000 applied rates by 2010, including chapters on meat, fish,

Box 1. Treatment of Capital Goods

The Government of Jordan committed to removing duties from capital imports in the 1990s under support from the World Bank. However, the average trade-weighted tariff has changed very little over the past decade. Approximating capital good imports in 2003 by examining HS Chapters 84 to 89 and excluding vehicles in chapter 87, it appears that the trade-weighted average tariff on capital goods is about 4.4 percent. This is only marginally lower than the 4.6 percent indicated by the World Bank from 1994 tariffs.

It is instructive to take a closer look at Jordan's treatment of capital good imports. The United Nations Statistical Division has created the Broad Economic Classification series to classify traded goods by their end use. Using this classification to more accurately examine tariffs on capital goods, shows there are 1,131 capital goods out of a total number of 6,516 traded goods in the 2004 MFN tariff schedule.

Treatment of capital good imports is complicated by defining many tariff line items by their end use. If the imported good is "imported by factories as industrial inputs" then the tariff is zero, for most other purposes the tariff is 30 percent. There are 138 such dual purpose tariff lines. In addition to these dual-purpose tariffs 241 capital goods had fixed tariffs of 30 percent. These unavoidably high tariffs are imposed on goods such as refrigerator cabinets, weighing machines, drip irrigation systems, batteries, ball bearings, lamps, telephone equipment, and many parts and accessories. While the Government is reducing overall tariffs on capital imports, the number of capital goods enjoying 30 percent protection remained unchanged between 2002 and 2004.

Table B-1 MFN Duties on Imports of Capital Equipment

| **Tariff Line/ Tariff** | **2002** | **2004** |
|---|---|---|
| 0% | 520 | 704 |
| 2% | 32 | 1 |
| 3% | 103 | 3 |
| 4% | 24 | 0 |
| 5% | 42 | 52 |
| 10% | 150 | 116 |
| 15% | 3 | 2 |
| 20% | 24 | 12 |
| 30% | 241 | 241 |
| Total Tariff Lines | **1139** | **1131** |
| Dual-use Tariff Lines (0% or 30%) | 138 | 138 |
| Average Tariff (Duals set at 0%) | 8.7% | 7.8% |
| Average Tariff (Duals set at 30%) | 11.6% | 10.6% |

[30] There are 96 chapters in the Harmonized System of Customs Nomenclature. Chapter 77 is not in use.

Source: Derived from 2002 and 2004 tariff schedules using UN BEC capital goods classification. Note: Excludes vehicles.

The table shows the breakdown of tariffs on capital goods in 2002 and 2004, the earliest and latest years that complete and usable schedules were available at the time of the analysis. The simple average tariff on capital goods has reduced. The majority of goods are now not subject to a tariff. Assuming capital imports are for industrial purposes by setting the dual tariffs to zero, the simple average tariff on capital goods was 8.7 percent in 2002 and 7.8 percent in 2004.

Since this analysis was conducted the Customs Department has released its 2005 tariff schedule that removes the dual use tariff lines. As part of the Government of Jordan's review of investment incentives it is recommended that Customs identify remaining tariffs on capital goods.

- preparations of meat and fish, fruit and nuts, rubber, paper, iron and steel, and iron and steel products.

- The average bound tariff rates of 21 chapters will decrease by between 1 and 10 percent of their 2000 applied rates by 2010. These chapters include the following goods: products of live animal origin, live trees and other plants, and milling industry products.

The average bound tariff rates of ten of the 97 chapters remain bound at their current applied rates over the ten-year period; these chapters include such items as live animals, aircraft and ships, and fertilizers.

### 1.3.2 Jordan's Other Free Trade Agreements

The Government has entered into three major regional preferential trade agreements that have lowered trade barriers between Jordan and its trading partners over the past four years. All these agreements eventually lead to free trade areas linking Jordan and the partner countries.

#### 1.3.2.1 European Union Association Agreement

Jordan has enjoyed duty and quota free access to the EU on its industrial exports since 1979. The new Association Agreement provides for Jordan to progressively liberalize its own market to EU exports over a 12-year period starting on 1 May 2002. Industrial products subject to these phased reductions are listed in a series of Annexes to the EUAA. Annex III (Table A) lists those goods with tariffs in the range of 5 percent to 10 percent in 1996.[31] Annex III (Table B) lists those goods with tariffs in the range of 20 percent to 70 percent. The maximum tariff and surcharge in 1996 was about 70 percent. There were almost no tariffs in the 10 percent-20 percent range.

Annex III (Table B) includes electrical and mechanical machinery, transportation equipment, furniture and clothing. Tariff reductions commence on 1 May 2006 and

[31] The base rates for the EUAA were based on a unified rate combining 1996 tariffs, surcharges and fees. Surcharges and fees added any value from 3.2 to 20.2 percentage points to the underlying tariff rate.

conclude with duty free treatment on 1 May 2014. Some common processed foods, such as milk products, butter and oils, pasta and bread products listed in Annex II will only enjoy a maximum 50 percent tariff reduction and not until 1 May 2010, again starting from 1 May 2006. No agreement has been reached to reduce tariffs on some alcoholic beverages, clothing and shoes, used vehicles, some furniture and lighting equipment, carpets and blankets, and some food preparations listed in Annex IV.

Agricultural products enjoy no special tariff reductions beyond the phased MFN reductions. Jordan adopts the list of agricultural products in Annex II to the Treaty of Rome in addition to a list of 25 agricultural products listed in Protocol Two of the Agreement.

Table 2 Jordan Tariff Treatment of Imports from the EU

| Annexes of EUAA (see Annex Two of this report for list of goods) | Approximate Number of Tariff Lines | 1996 Base Duties | Treatment under EUAA (starting 1 May 2002) | Current EUAA Duty Treatment (mid-2005) | Current MFN Treatm |
|---|---|---|---|---|---|
| Annex II Treaty of Rome and Protocol Two EUAA (agricultural products) | 700 | 5%-70% 8.3% weighted average tariff | No reduction | Same as MFN | 0%-30% 4.5% weighte average tariff |
| Annex II | 50 | 5%-70% | 50% reduction by 2010 | Reductions start 1 May 2006 | 0% - 3( |
| Annex III (Table A) | 1,800 | 5%-10% | Duty free by 2006 | 1%-2% | Likely 5% |
| Annex III (Table B) | 3,500 | 20%-70% | Duty free by 2014 | No change yet Start 1 May 2006 | 0% - 3( |
| Annex IV | 213 | 5%-70% | No reduction agreed yet | Same as MFN | 0% - 3( |
| Remaining tariff lines | 237 | Duty Free | Immediate Duty Free | Duty Free | |
| Total | 6,500 | | | | |

Note: shaded font means that the relevant products have undergone tariff reductions either under the EUAA or the WTO accession program.

Table 2 shows that the only tariff reductions enjoyed by Jordanian consumers under the EUAA related to products listed in Annex III (Table A). This group includes industrial raw materials, pharmaceuticals, leather products, jewelry, some processed foods and medical appliances. Starting from 1 May 2002, the tariffs on these products are being

reduced by 20 percent annually. However, given their low level of base duties these products are already likely to be duty free today under the regular MFN tariff reductions, suggesting that no preferential tariff reductions have taken place under the EUAA to date.

In summary, there is no liberalization of agricultural products entering Jordan under the EUAA and Jordan has delayed effective liberalization of industrial products under the EUAA as long as possible, starting in 2006 and ending in 2014 for most products subject to the maximum MFN rate of 30 percent. There remain a handful of industrial products competing with Jordanian producers upon which no agreement to liberalize has been reached.

**1.3.2.2. Jordan-US Free Trade Agreement**

The JUSFTA came into effect on 17 December 2001. The agreement provides for gradual elimination of all duties and quotas on all goods traded between the two countries by 2010, except tobacco and alcohol. Both countries are reducing tariffs on almost all goods according to five general staging categories starting from the tariff base dated 8 June 2000. See Table 3 below. The current simple average tariff is 5.8 percent excluding the few tariff line items in the special staging categories compared to the simple average 11.7 percent MFN tariff.

Goods in Categories A, B and C are already duty free, representing 41 percent of total tariff lines. Goods in Category C were subject to 20 percent tariffs but only comprised 5 percent of total tariff lines, including fish, cheese, tea, fabrics, yarns, some precious metal products, wire products and screws, and clocks. Goods in Category E (representing 21 percent of total tariff lines) adopt the WTO accession tariff reduction schedule. Over 85 percent of these products were duty free when the JUSFTA entered into force. Goods in Category D (representing 36 percent of total tariff lines) are being reduced at an annual rate of 10 percent over the ten-year period. To date duties have been halved on these products to a 15 percent tariff rate. Such goods represented 38 percent of all tariff lines in 2000 – comprising consumer goods, and many capital and intermediate goods competing with Jordanian manufacturers. Finally passenger motor vehicles enjoyed their first tariff reduction under the FTA in January 2005, from 30 percent to 24 percent.

Goods competing with Jordanian manufacturers have their own Special Staging Categories I, J, K, L and M. Tariffs on Category I goods are being reduced in eight equal installments until duty free in 2008. Category I comprises the following products: circuit breakers, coaxial cables, ground bovine meat for sandwiches, honey, ground nuts, breakfast cereals, sausages, ice-cream, sweet corn and chewing gum. These are likely US exports for which the US negotiating team requested a faster rate of tariff reduction than enjoyed by their Category D counterparts. Tariff reductions on apple and chicken imports will begin in 2006[32]. Duties on passenger vehicles will be reduced after 2004[33]. Tariffs on alcohol products will only be reduced to 44.5 percent of their base rates[34].

[32] Staging Categories J and K of Jordan tariff schedule.
[33] Staging Category M of Jordan tariff schedule.
[34] Staging Category L of Jordan tariff schedule.

**Table 3 Jordan's Tariff Reductions on Imports from the US under JUSFTA**

| Staging Category | Base Tariffs (in 2000) | Share of Total Products | Annual Reductions start on | Date when Duty Free | Description Goods |
|---|---|---|---|---|---|
| Category A | 5% | 19.8% | 2001 | 1 Jan 2002 | Mainly raw mate |
| Category B | 10% | 16.4% | 2001 | 1 Jan 2004 | Mainly interme inputs |
| Category C | 20% | 4.9% | 2001 | 1 Jan 2005 | Some food, y fabrics, wire |
| Category D | 30% | 36.5% | 2001 | 1 Jan 2010 | Mainly consu goods |
| Category E | 85% are duty free | 21.2% | 2001 | WTO Schedule | Raw, intermed capital goods |
| Category I | 30% | 0.5% | 2001 | 1 Jan 2008 | Sensitive goods |
| Category J | 30% | 0.1% | 2006* | 1 Jan 2010 | Chicken |
| Category K | 30% | 0.0% | 2006* | 1 Jan 2010 | Apples |
| Category L | 180% | 0.3% | 2004 | Max 55% reduction by 2010 | Alcohol |
| Category M | 30% | 0.5% | 2005 | 1 Jan 2010 | Passenger cars |

* Note that smaller reductions commenced in 2001.

Fourteen products accounted for one-half of Jordan's imports from the United States in 2000. Six of these products already entered Jordan duty-free; duties on two tobacco-related products are not being reduced; and demand for US aircraft parts and weapons is unlikely to respond to lower tariffs. This leaves corn oil, aluminum sheets and radio transceivers subject to tariffs that will be liberalized under the JUSFTA.

As required by the US Tariff Act 1930, the United States International Trade Commission (USITC) undertook a study of the impact of the proposed JUSFTA on the US economy. It concluded that any changes in trade between the two countries induced by the JUSFTA would have negligible impact on the US economy and the only significant trade change would likely be an increase in Jordanian garment exports to the US. The Commission forecast the impact of removing Jordanian tariffs on the value of US exports of cereals, electrical machinery and machinery and transport equipment. Cereals other than wheat were expected to increase by 14 percent over 1998 values, electrical machinery (HS Chapter 85) by 104 percent, and machinery and transport equipment (HS Chapters 37, 84, 86-91) by 64 percent.

**1.3.2.3 Greater Arab Free Trade Area**

The Arab economic and Social Council of the League of Arab States adopted the Agreement on the Facilitation and Development of Trade Among Arab States in 1981. The Agreement seeks to establish the Greater Arab Free Trade Area (GAFTA) by requiring member countries to lower tariffs on goods by 10 percent each year starting from 1998. GAFTA does not cover any trade in services. The Agreement also covers safeguards, subsidies, balance of payments, definition and handling of dumping. Sixteen Arab countries have ratified the Agreement: Bahrain, Egypt, Jordan, Iraq, Kuwait,

Lebanon, Libya, Morocco, Oman, Palestinian National Authority, Qatar, Saudi Arabia, Syria, Sudan, Tunisia, UAE and Yemen.
In February 2002, the target date to eliminate eligible tariffs was brought forward to 1 January 2005. The remaining 20 percent share of base tariffs was removed on 1 January 2005 by GAFTA members. This is a significant achievement given the region's high MFN rates. Moreover, GAFTA members abolished a long list of products that were excluded from GAFTA preferences by all countries. The list included: garments, dairy products, ceramics, vehicles, tomato paste, cigarettes, steel and aluminum for construction, and carpets. Furthermore, from the beginning of 2005 a seasonal program that excluded certain agriculture products was abolished. Finally, six member countries, except Egypt, abolished their own lists of excluded products in 2003. Jordan's list only comprised 34 products.
Products can be excluded on the basis of health, security and other national concerns. Members have agreed on a long list of at least 400 products that fall in this category.[35] Despite this list the average trade weighted tariff is likely to be close to zero percent.

#### 1.3.2.4 Other Bilateral Trade Agreements

Jordan has also entered into free trade area agreements with five Arab countries. Tariffs have generally been eliminated on trade between Jordan and these countries, subject to lists of excluded products and seasonal restrictions on fruit and vegetables. Jordan signed a free trade agreement with Singapore in April 2004. This is not expected to have a significant affect on Jordan's direction of trade. Jordan imported 8.6 million JD worth of goods from Singapore in 2004. Although, the agreement may encourage the development of an electronics assembly industry in Jordan if a trilateral cumulation of origin arrangement can be agreed between Jordan, Singapore and the United States based on their respective trade agreements.[36]

Jordan is currently negotiating with a potentially larger trading partner – Turkey. The government is also considering negotiating with Canada. With free access to the largest export markets already locked in, it appears that the Government is interested to gain further access to secondary markets through bilateral agreements. This raises the issue of the economic costs to Jordan of trade diversion from the lowest cost producer, particularly China, to treaty partners. See Jim Robertson's report for the Amir Program that outlines the case for Jordan to continue reduction of its MFN tariffs unilaterally. This is a first best policy reform benefiting the entire economy.[37] In addition, the Government should review the anti-export bias of its current tariff rate structure. Varying tariff rates on production inputs and outputs can lead to unintended high effective rates of protection. JAED could undertake such a study to steer future tariff changes. This is important to do now given that the Customs Department has made an unusually large number of tariff changes this year.

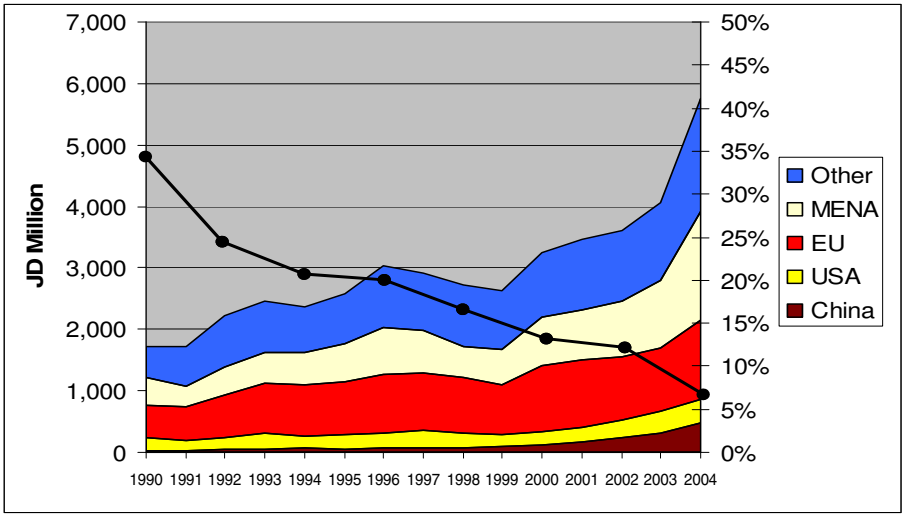
[35] The list of excluded goods describes each product rather than referring to a specific HS code for every product.
[36] Egypt (1998), Tunisia (1998), Morocco (1998), Syria (2001), UAE (2001).
[37] Ibid, footnote 3.

## Part II Impact on Imports

Table 4 and Figure 2 show how total imports have increased dramatically in the five year period 1999 – 2004, by an average of 18 percent annually compared to 5 percent annually in the 1990s. These rates belie considerable annual volatility. Imports grew by only 6 percent in 2001 and 4 percent in 2002, and growth was negative from 1997-99. The largest single year of growth was 2004 with a total increase of 42 percent. Accounting for the increase in the cost of oil imports that year still leaves a very high growth rate of 36 percent. The row of tariffs below Figure 2 shows the reduction in average trade weighted MFN tariffs over time. The value of 6 percent in 2004 is an estimate of the average tariff weighted tariff by trade and by country of origin under the different regional trade agreements.[38]

Looking firstly at geographic sources of this growth, the MENA region has enjoyed substantial growth over the past five years and has increased its share of total imports from 22 percent to 31 percent over this period. So, GAFTA appears to have had some effect on regional trade. China has also enjoyed substantially more growth in the last five years than during the 1990s and has more than doubled its share of total imports. Jordan applies its MFN tariffs to both WTO and non-WTO member countries. Therefore, China's accession to the WTO in 2002 did not increase its access to the Jordanian market. The increase in imports in China reflects growth from a low base and is in line with total import growth.

Figure 2 Jordan's Imports by Region and Trade-Weighted Average Tariff

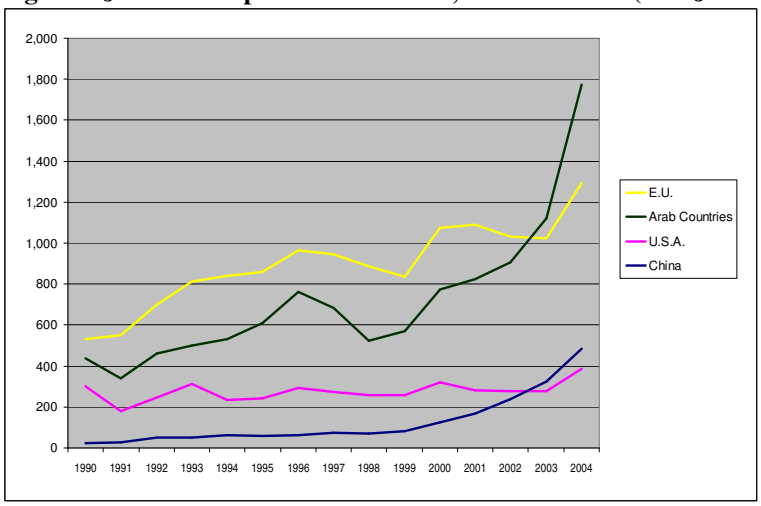



Source: CBJ Annual Statistical Series and Table 2 above.

Note: Import value is based on product cost, insurance and freight. Trade-weighted average tariff estimated from current import value and average tariff prevailing under Jordan's free trade agreements.

[38] By 2004 only 20 percent of any MFN tariff was levied on imports from GAFTA members. The simple average tariff on imports from the US is 5.8 percent so the trade weighted average tariff on imports from the United States is possibly 4 percent.

**Figure 3 Jordan's Imports from the EU, US and China (CIF JD Million)**




Source: CBJ Annual Statistical Series.

Growth of US exports to Jordan has also increased significantly recently and has enabled the US to maintain its 7 percent share of total imports. Some part of this recent growth must be due to the JUSFTA. The average growth rate of 1 percent in the 1990s masks wide annual swings in exports to Jordan; imports from the US fell by 12 percent between 1997-99. Imports from the EU have grown more modestly with less differentiation between rates in the 1990s and the period since 2000. As a consequence, the EU has lost 30 percent of its market share in Jordan since 2000. However, EU exports to Jordan increased by 26 percent in 2004, after three years of very low or negative growth. This may reflect some impact of the EUAA in 2004.

**Table 4 Growth in Imports 1991-2004**

| Source | Average annual growth | | % Share of total imports | |
|---|---|---|---|---|
| | 1991-1998 | 999-2004 | 2000 | 2004 |
| China | 16% | 42% | 3 | 8 |
| MENA | 5% | 27% | 22 | 31 |
| US | 1% | 15% | 7 | 7 |
| Other | 8% | 15% | 33 | 32 |
| EU | 6% | 10% | 32 | 22 |
| Total | 5% | 19% | 100 | 100 |

Source: Central Bank of Jordan (CBJ) Annual Statistical Series.

Imports by commodity show a volatile path over the last twenty years. Total import growth matched GDP growth in the late 1980s but slowed relative to GDP in the 1990s to the point where the value of imports remained constant between 1995 and 1999. Since 2000 total imports have soared. Even excluding oil, imports increased by more than twice the growth of GDP. Notable increases have been edible oils, chemicals (plastics and pharmaceutical products), and most manufactured goods. In particular, food, telecommunication and electrical equipment, and clothing have consistently grown faster

than total imports over the last decade. Fabric, steel and iron have seen accelerated growth since 2000.

QIZ growth and the construction boom help to explain the increased imports of fabric, steel and iron, and machinery. Privatization of Jordan Telecom and the establishment of Fastlink, MobileCom and X-Press help to explain the increases of telecommunication equipment imports. Increases in imports of edible oils and clothing are likely driven by tariff reductions.

Iron and steel imports have risen even further in the first quarter of 2005, likely encouraged by a tariff reduction from 30 percent to 20 percent. Imports of vehicles have rebounded by 55 percent in 2005, partly explained by the first reduction in tariffs on vehicles imported from the US under the JUSFTA.

**Table 5 Imports by Category 1985-2004**

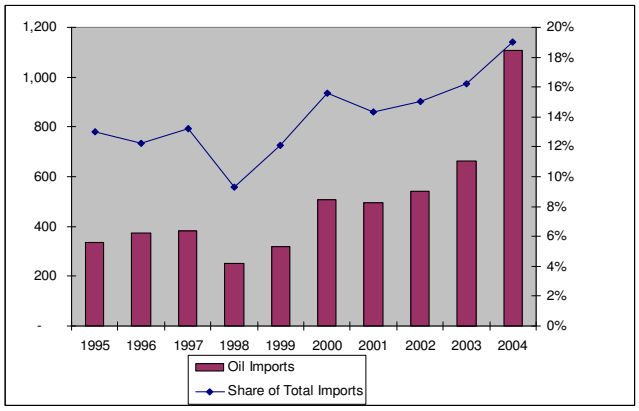
| | Share of Total 2004 Imports | Jan-Mar 2005 over Jan-Mar 2004 | 2000-04 annual average growth | 1995-99 annual average growth | 1990-94 annual average growth | 19 89 an av gr |
|---|---|---|---|---|---|---|
| GDP at market prices | | | 8.1% | 6.3% | 16.7% | 3.4 |
| Total Imports | 100% | 26% | 19% | 0% | 9% | 4% |
| excluding mineral fuels | 81% | 23% | 17% | 1% | | |
| 0- Food and Live Animals | 13% | -13% | 10% | 4% | 0% | 3% |
| 1- Beverages and Tobacco | 1% | 13% | 25% | 43% | 10% | 30 |
| 2- Crude Materials, Except Fuels | 2% | 23% | 2% | -2% | 16% | 6% |
| 3- Mineral Fuels and Lubricants | 19% | 38% | 30% | -1% | -1% | 1% |
| 4- Animal and Vegetable Oils, Fats, Waxes | 3% | -25% | 67% | -13% | 69% | -7 |
| 5- Chemicals | 10% | 17% | 16% | 1% | 12% | 25 |
| 6- Manufactured Goods by Material | 20% | 27% | 33% | -6% | 11% | 8% |
| Textile Yarn, Fabrics, Made-up Articles | 8% | 13% | 65% | -3% | | |
| Iron and Steel | 4% | 84% | 36% | -8% | | |
| 7- Machinery and Transport Equipment | 23% | 37% | 10% | 4% | 21% | 6% |
| Machinery for Agriculture, Industry, Constr. | 3% | 26% | 18% | -6% | | |
| Telecommunication Equipment | 4% | 10% | 31% | 3% | | |
| Electrical Machinery | 3% | 13% | 20% | 5% | | |
| Transport Equipments and Spare Parts | 9% | 55% | 3% | 9% | | |
| 8 - Miscellaneous Manufacturers | 7% | 53% | 27% | 6% | 16% | -5 |
| Clothing and Footwear | 2% | 8% | 25% | 5% | | |
| 9- NES | 3% | 59% | 24% | 7% | -5% | -1 |
| | | | | | | |

Source: Calculated from CBJ Bulletin, Table 37.

## 2.1 Modeling Import Demand in Jordan

Regressing import demand against changes in GDP, relative prices, and estimated customs duties over the period 1984-2004 provides a statistically significant customs duty elasticity of demand for imports of -0.2. This means that a 1 percent decrease in the amount of duty paid to Customs leads to a 0.2 percent increase in the volume of imports. The elasticity is larger than the relative current and lagged price elasticity of demand for imports – neither of which were statistically significant.

**Figure 4 Jordanian Oil Imports (million JD)**

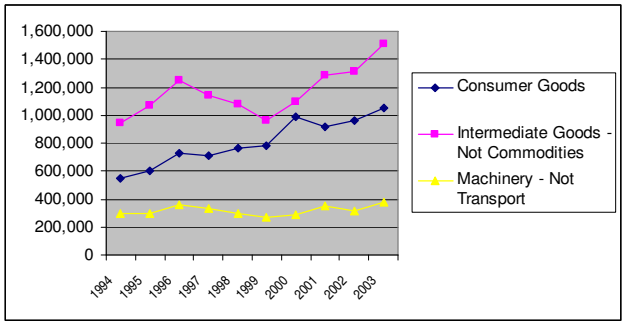



Much of the unexplained variation in import demand is likely due to changes in oil imports. Figure 4 below shows the volatility of oil imports over the past ten years. The reductions in 1998 and 1999 were during Jordan's oil-for-food arrangement with Iraq. Higher oil prices and the end of the arrangement with Iraq led to the significant increase in oil imports in 2004.

## 2.2 Imports Classified by End Use Over Time

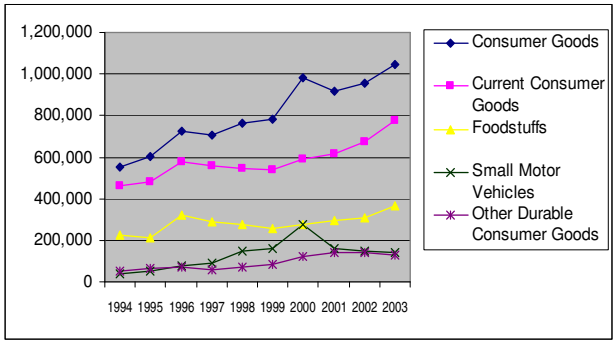
The Department of Statistics has classified imports by end use over the same data period, 1994-2003, used to examine manufacturing and services performance in this report.

**Figure 5 Imports by Broad End-Use Category (000 JD)**



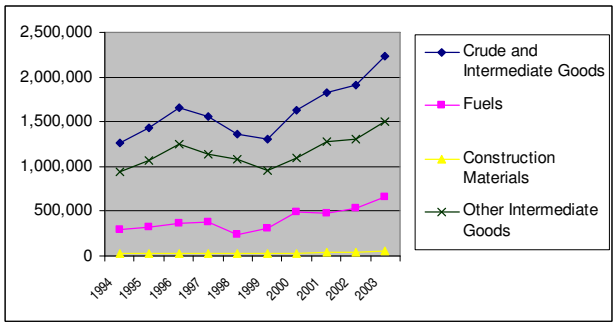

Looking at total goods, all broad end-use categories improved in 1994-1996. However, intermediate good imports declined for the next three years while consumer good imports continued to rise. Imports of capital goods also fell with some increases in the last three years. This suggests that manufacturing either suffered a significant downturn from 1996 to 2000, or switched to locally made intermediate inputs and capital equipment, as consumers switched to imported consumer goods.

**Figure 6 Consumer Good Imports (000 JD)**




It appears that the largest contributor to the rapid growth of consumer product imports is small motor vehicles, increasing from 36 million JD in 1994 to a peak of 273 million JD in 2000.[39] The large increase in food imports in 1996 may be due to the removal of one or more quantitative restrictions on certain food products. Other consumer durables were slow to increase until accession in 2000, likely because of the significant reduction in the top tariff rate from 40 percent to 35 percent in September 1999 and then to 30 percent in April 2000.

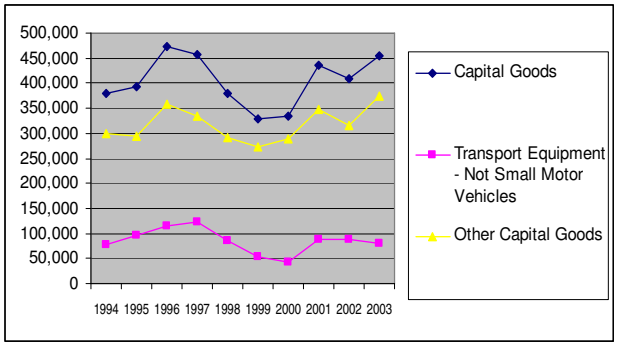
**Figure 7 Intermediate Good Imports (000 JD)**




Intermediate good imports are larger than consumer and capital good imports combined. Imports of construction goods are negligible. Many construction inputs are almost non-tradables given their low value/weight ratio. Also, cement and iron and steel have been highly protected sectors in Jordan. The largest share of the 550 million JD increase in intermediate goods between 1999 and 2003 is likely represented by textile imports – increasing 200 million JD over this period.

**Figure 8 Capital Good Imports (000 J)**

By 2003, imports of capital goods had not recovered from their trough of 1999-2000. However, recent growth in imports of non-transport equipment has reached new peaks after four years of inconsistent growth.




[39] This excludes duty-free imports of motor vehicles into Zarqa Free Zone. Part of the increase in 2000 was likely due to the duty-free incentive for taxi owners to replace their aging vehicles.

## 2.3 Imports by Regional Trade Agreement

### 2.3.1 US Exports to Jordan

What import categories from the United States have increased during the first half of JUSFTA implementation? The simple average tariff on imports from the United States has already fallen from about 15.9 percent in the base year of 2000 to 5.8 percent by January 2005.[40] The simple average MFN tariff had only fallen to 11.7 percent.

Excluding the largest export, wheat, the top 50 exports to Jordan by value increased by 184 percent between 2001 and 2004. Imports of wheat are volatile and, as discussed before, are provided under US Government assistance and have not been affected by tariff changes under the JUSFTA. Total exports increased by 57 percent, much more than would be suggested by GDP over this period, but less than the 67 percent increase in total Jordanian imports over this period.[41]

The USITC predicted that non-wheat cereal exports from the US to Jordan would increase by 14 percent over the period that duties were removed compared to their value in 1998 (the latest full year before the analysis took place). Table 6 shows that corn and rice were ranked four and five largest imports by value in 2004 and had increased by 1,766 percent and 197 percent, respectively. USITC forecast electrical machinery (HS Chapter 85) would increase by 104 percent. The USITC database shows US exports of Chapter 85 products to Jordan increasing from $24.0 million in 2001 to $43.7 million in 2003 and $45.7 million in 2004.[42] The total 2001-2004 increase is 91 percent. In particular, imports of transmission apparatus and cameras (HS 8525) and navigation equipment (HS 8526) were sixth and seventh largest imports in 2004 and increased by 222 percent and 13,870 percent, respectively. The 10 percent tariff on HS 8526 products have been removed, while tariffs on HS 8525 have been reduced from the range of 0 percent to 30 percent to the new range of 0 percent to 5 percent.

Total imports of Chapter 85 products actually fell from 253 million JD in 2001 to 227 million JD in 2003 (the latest year DOS publishes on its web by HS chapter).

The United States doubled its market share of Jordanian 8525 imports to 24.5 percent.[43] USITC also forecast that machinery and transport equipment (HS Chapters 37, 84, 86-91) would increase by 64 percent. Imports of products in these chapters increased by 109 percent in the first four years of implementation (2001-2004). Table 6 shows that motor car imports from the US increased from $3.7 million in 2001 to 30.5 million in 2004 – even before the first tariff reduction took effect on 1 January 2005.

[40] This excludes products in the Special Staging Categories. The simple average tariff for all ad valorem tariffs is 5.8 percent.
[41] Wheat imports from the US halved between 2001-2004 to $46.7 million, substantially reducing total US exports to Jordan.
[42] According to the Department of Statistics in 2001-2003 imports of Chapter 85 products actually decreased from 31 to 18 million JD.
[43] There appears to be some classification problem with HS 8526 – USITC reports that the United States exported $10.9 million worth of these products to Jordan. DOS reports Jordan imported 403,000 JD worth of these products from the whole world.

Imports of freight transport vehicles increased by 2,325 percent to $7.6 million in 2004 under a substantial tariff reduction from 0 percent-30 percent to the new range of 0 percent-5 percent.

Military equipment imports were the single largest import after wheat and experienced the largest increase. However, the military are exempt from tariffs and so such imports are not influenced by the agreement. Some of the aircraft part imports (8803) could have been influenced by the removal of the 10 percent tariff.

A big surprise is the 148 percent increase in imports of furniture to $10.7 million in 2004 after duties have halved from 30 percent to 15 percent. Such furniture is likely high value so the tariff reduction would represent a large reduction in the transaction value. Vegetable oils are a low value item, but when imported in bulk even a small reduction in the tariff is enough to shift the direction of trade. The 30 percent tariff on refined vegetable oil imports for non-industrial consumption have been removed. Furthermore, the Vegetable Oil Industries Co. Ltd lost its exclusive right to produce vegetable margarine for the local market in 2001.

It is clear that imports from the US have responded to tariff reductions under the JUS FTA. A gravity model could be used to estimate the additional trade generated by the agreement.[44]

[44] Gravity models predict trade flows between countries based on variables such as transport costs, market size, income, etc.

**Table 6 Top 50 US Exports to Jordan, 2001 and 2004, with Tariff Changes**

| | HTS_NUM | YEAR_2001 | YEAR_2004 | % Change | BTf | |
|---|---|---|---|---|---|---|
| 9305 | PARTS AND ACCESSORIES OF ARMS (MILITARY WEAPONS, PISTOLS, ETC.) | 80,447 | 31,389,910 | 38919% | 3 | |
| 8703 | MOTOR CARS AND OTHER MOTOR VEHICLES TO TRANSPORT PEOPLE | 3,724,273 | 30,491,897 | 719% | 53 | |
| 8803 | PARTS OF GLIDERS, AIRPLANES, OTHER AIRCRAFT, SPACECRAFT | 25,737,130 | 26,603,822 | 3% | 1 | |
| 1005 | CORN (MAIZE) | 1,381,194 | 25,768,656 | 1766% | 5 | |
| 1006 | RICE | 6,613,344 | 19,631,126 | 197% | 5 | |
| 8525 | TRANSMISSION APPARATUS FOR RADIO, TV; TV CAMERAS; STILL VIDEO CAMERAS | 4,506,461 | 14,512,797 | 222% | 03 | |
| 8526 | RADIO NAVIGATIONAL AID APPARATUS AND RADIO REMOTE CONTROL APPARATUS | 77,882 | 10,880,019 | 13870% | 1 | |
| 9403 | FURNITURE, NESOI (OTHER THAN SEATS, MEDICAL, ETC) AND PARTS THEREOF | 4,302,390 | 10,652,637 | 148% | 3 | |
| 9018 | INSTRUMENTS, APPLIANCES USED IN MEDICAL, SURGICAL, DENTAL,ETC | 7,037,373 | 9,058,089 | 29% | 03 | |
| 1515 | FIXED VEGETABLE FATS AND OILS NOT CHEMICALLY MODIFIED | 4,819,186 | 8,946,704 | 86% | 53 | |
| 8802 | AIRCRAFT, POWERED; SPACECRAFT (INCLUDING SATELLITES) | 1,441,320 | 8,003,472 | 455% | 0 | |
| 4703 | CHEMICAL WOODPULP, SODA OR SULFATE, OTHER THAN DISSOLVING GRADES | 8,005,611 | 7,949,304 | -1% | 5 | |
| 8710 | TANKS AND ARMORED FIGHTING VEHICLES, AND PARTS OF SUCH VEHICLES | 202,884 | 7,938,769 | 3813% | 1 | |
| 8704 | MOTOR VEHICLES FOR THE TRANSPORT OF GOODS | 312,494 | 7,577,189 | 2325% | 03 | |
| 8421 | CENTRIFUGES, FILTERING, PURIFYING MACHINERY, FOR LIQUIDS OR GASES; PARTS | 5,245,005 | 6,464,900 | 23% | 03 | |
| 8529 | PARTS FOR TELEVISION, RADIO AND RADAR APPARATUS (OF HEADINGS 8525 TO 8528) | 3,996,840 | 6,341,125 | 59% | 03 | |
| 7303 | TUBES, PIPES AND HOLLOW PROFILES OF CAST IRON | 426,222 | 6,264,854 | 1370% | 3 | |
| 2401 | TOBACCO, UNMANUFACTURED; TOBACCO REFUSE | 14,751 | 6,215,334 | 42035% | 53 | |
| 9027 | APPARATUS FOR PHYSICAL OR CHEMICAL ANALYSIS; PARTS ETC. | 1,551,315 | 6,049,507 | 290% | 03 | |
| 2915 | SATURATED ACYCLIC MONOCARBOXYLIC ACIDS ETC. DERIVATIVES | 2,962,673 | 5,970,630 | 102% | 5 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 8431 | PARTS OF DERRICKS, FORK-LIFT TRUCKS, CONVEYERS, ETC. | 1,884,935 | 5,792,782 | 207% | 2<br>-<br>3 | |
| 8471 | AUTOMATIC DATA PROCESSING MACHINES AND UNITS THEREOF; | 5,741,811 | 5,706,259 | -1% | 0 | |
| 8443 | PRINTING MACHINERY; MACHINES FOR USES ANCILLARY TO PRINTING; PARTS | 347,415 | 5,452,683 | 1470% | 0 | |
| 802 | NUTS NESOI, FRESH OR DRIED | 3,174,698 | 5,134,643 | 62% | 3 | |
| 1208 | FLOURS AND MEALS OF OIL SEEDS OR OLEAGINOUS FRUITS, OTHER THAN MUSTARD | - | 5,055,018 | na | 0<br>3 | |
| 2907 | PHENOLS; PHENOL-ALCOHOLS | - | 4,153,655 | na | 1 | |
| 4901 | PRINTED BOOKS, BROCHURES, LEAFLETS AND SIMILAR PRINTED MATTER | 782,361 | 3,633,546 | 364% | 0 | |
| 9802 | EXPORTS OF ARTICLES DONATED, NESOI; ARTICLES EXPORTED AND RETURNED, | 480,838 | 3,583,917 | 645% | | |
| 8424 | MECHANICAL APPLIANCES FOR DISPERSING LIQUID OR POWDER; PARTS THEREOF | 428,347 | 3,485,713 | 714% | 0<br>3 | |
| 8429 | SELF-PROPELLED BULLDOZERS, ANGLEDOZERS, GRADERS, ETC. | 122,720 | 3,240,674 | 2541% | 0 | |
| 3904 | POLYMERS OF VINYL CHLORIDE, OTHER HALOGENATED OLEFINS, IN PRIMARY FORMS | 87,040 | 3,143,870 | 3512% | 5<br>3 | |
| 8705 | SPECIAL PURPOSE MOTOR VEHICLES, NESOI, INCLUDING WRECKERS, ETC. | - | 3,121,829 | na | 0<br>1 | |
| 9030 | OSCILLOSCOPES, SPECTRUM ANALYZERS FOR MEASURING ELECTRICITY; PARTS | 777,611 | 3,119,980 | 301% | 0<br>1 | |
| 1209 | SEEDS, FRUIT AND SPORES, OF A KIND USED FOR SOWING | 1,768,094 | 3,019,923 | 71% | 5 | |
| 9021 | ORTHOPEDIC APPLIANCES; HEARING AIDS; PARTS ETC. | 2,459,777 | 2,901,025 | 18% | 0 | |
| 9306 | BOMBS, GRENADES, TORPEDOES, PROJECTILES, ETC; PARTS THEREOF | 1,733,750 | 2,832,896 | 63% | 5<br>3 | |
| 8708 | PARTS AND ACCESSORIES FOR MOTOR VEHICLES | 1,182,000 | 2,770,517 | 134% | 1<br>-<br>3 | |
| 8479 | MECHANICAL APPLIANCES HAVING INDIVIDUAL FUNCTIONS, NESOI; PARTS THEREOF | 662,862 | 2,641,174 | 298% | 0<br>3 | |
| 3004 | MEDICAMENTS (EXCEPT VACCINES ETC., BANDAGES OR PHARMACEUTICALS) | 2,569,177 | 2,620,580 | 2% | 0<br>5 | |
| 7606 | ALUMINUM PLATES, SHEETS AND STRIP, OVER 0.2 MM (0.0079 IN.) THICK | 1,896,965 | 2,514,068 | 33% | 5<br>2 | |
| 8418 | REFRIGERATORS, FREEZERS AND SUCH EQUIPMENT; HEAT PUMPS NESOI, PARTS | 3,464,512 | 2,510,929 | -28% | 0<br>3 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 406 | CHEESE AND CURD | 161,681 | 2,497,109 | 1444% | 2 | |
| 9022 | X-RAY ETC. APPARATUS, HIGH TENSION GENERATORS ETC.; PARTS, ACCESSORIES | 1,576,567 | 2,442,239 | 55% | 0<br>1 | |
| 8413 | PUMPS FOR LIQUIDS; LIQUID ELEVATORS; PARTS THEREOF | 1,546,245 | 2,292,753 | 48% | 0<br>3 | |
| 8411 | TURBOJETS, TURBOPROPELLERS AND OTHER GAS TURBINES, AND PARTS THEREOF | 2,187,657 | 2,252,541 | 3% | 0 | |
| 8414 | AIR OR VACUUM PUMPS, COMPRESSORS, FANS; VENTILATING HOODS; PARTS | 2,250,211 | 2,217,167 | -1% | 0<br>3 | |
| 2106 | FOOD PREPARATIONS NESOI | 2,739,016 | 2,179,737 | -20% | 0<br>8 | |
| 6309 | WORN CLOTHING AND OTHER WORN TEXTILE ARTICLES | 1,235,617 | 2,088,023 | 69% | 2<br>-<br>3 | |
| 8805 | AIRCRAFT LAUNCHING GEAR; GROUND FLYING TRAINERS; PARTS THEREOF | 113,013 | 2,072,149 | 1734% | 0<br>1 | |
| | Subtotal | 123,813,715 | 351,188,140 | 184% | | |
| 1001 | WHEAT AND MESLIN | 86,722,585 | 46,709,149 | -46% | 0 | |
| | TOTAL Imports from US | 339,129,451 | 531,415,446 | 57% | | |

* The lower tariff rate is applied if the import is used as an input into industry as opposed to other uses.

**Table 7 Jordanian Imports from Arab Countries**

| | Annual Growth 2000-4* | Share of Total 2004 Imports | 1st Qtr 2005 Growth |
|---|---|---|---|
| Total Imports | 32% | 100% | 30% |
| Non-Fuel Imports | 36% | 39% | 12% |
| 0 - Food and Live Animals | 45% | 11% | -6% |
| Meat, Fish and preparations thereof | 6% | 1% | -33% |
| Cereals and Cereal Preparations | 219% | 3% | -51% |
| Fruits, Vegetables and Nuts | 19% | 3% | -15% |
| 1 - Beverages and Tobacco | 189% | 1% | 39% |
| 2 - Crude Materials, Inedible, Except fuels | -9% | 1% | 24% |
| Oil Seeds Oleaginous Fruit | 2% | 0% | -41% |
| Crude Minerals and Crude Fertilizers | -23% | 0% | -13% |
| 3 - Mineral Fuels, Lubricants | 30% | 61% | 40% |
| Crude Oil | 26% | 43% | 25% |
| Petroleum Products | 22% | 10% | 122% |
| 4 - Animal and Vegetable Oils , Fats | 51% | 0% | -7% |

| | | | |
|---|---|---|---|
| 5 – Chemicals | 31% | 9% | 26% |
| Plastic and Articles thereof | 32% | 6% | 15% |
| 6 - Manufactured Goods by Material | 48% | 11% | 4% |
| Textile Yarn, Fabrics, Made up Articles | 38% | 2% | 63% |
| Iron and Steel | 118% | 2% | -55% |
| Copper | 64% | 1% | 59% |
| Aluminum | 22% | 2% | -25% |
| 7 - Machinery and Transport Equipment | 34% | 1% | 37% |
| Electrical Machinery, Apparatus | 36% | 1% | 12% |
| 8- Miscellaneous Manufactured Articles | 26% | 3% | 48% |
| Clothing and Footwear | 17% | 1% | 58% |
| 9 - Commodities and Transactions nes | -3% | 0% | 1045% |

Source: Calculated from CBJ Bulletin, Table 42.
*Calculated as a quarter of total 2000-2004 growth.

**2.3.2 Imports under GAFTA**

Imports from Arab countries have increased each year on average by 32 percent since 2000 – compared to only 19 percent for total imports.[45] In 2004 imports from the region grew by a staggering 58 percent. Non-oil imports have grown faster than oil imports from Arab countries over 2000-2004 and currently make up about 40 percent of Jordan's total imports from the region. Food, plastics, textiles, iron and steel, aluminum and copper represent 24 percent of total imports and have been experiencing strong growth. Products most likely enjoying the greatest advantage from GAFTA-induced tariff reductions are food imports from the region. The region has a comparative advantage in food and commodities which are now enjoying their rightful place in regional trade.

2.3.3 Imports from the European Union

It appears that the lack of significant Jordanian preferential treatment of EU imports and continuing MFN reductions for all countries has lead to the declining EU share of total Jordanian imports over the past five years. The average growth of EU exports to Jordan between 2000-2004 was 5 percent compared to 19 percent total import growth. In particular, EU exports of food products to Jordan have steadily declined. European Union exports are now concentrated in higher value added chemicals, machinery and transport equipment.

As Figure 8 shows EU exports to Jordan are volatile. In 1999 and 2004 imports increased by over 25 percent each year while actually declining in 2002 and 2003. By 2004 EU exports of machinery and transport equipment had recovered their 2000 levels. Transport equipment is the largest category of EU exports to Jordan and made a large gain in 2004 to JD 250 million up from JD 170 million in 2003. This increase has continued into the first quarter of 2005. The second largest category, chemicals, have enjoyed steady growth over the past five years, particularly plastics and pharmaceuticals.

[45] The term "Arab Countries" is used by the CBJ in its Monthly Bulletin of Statistics. No list of countries is provided.

Iron and steel and textiles have generally declined over the past few years. Declining textile sales reflects the preference for Jordanian garment manufacturers to source fabric from China and export under the JUSFTA than compete with Turkey, Eastern Europe and other MENA countries in the EU garment market using European fabric.

**Table 8 Jordanian Imports from EU Countries**

| | Annual growth rate 2000-2004* | Share of total Imports from EU 2004 | Growth 1st Qtr 2005 over 1st Qtr 2004 |
|---|---|---|---|
| Total | 5% | 100% | 24% |
| 0 - Food and Live Animals | -8% | 8% | -6% |
| Dairy Products and Eggs | -6% | 2% | -29% |
| Cereals and Cereal preparations | -14% | 1% | -46% |
| Sugar | -23% | 0% | 465% |
| 1 - Beverages and Tobacco | 6% | 0% | 11% |
| 2 - Crude Materials, Inedible, Except fuels | 3% | 2% | 3% |
| 3 - Mineral Fuels, Lubricants | -13% | 1% | -88% |
| 4 - Animal and Vegetable Oils, Fats | -9% | 0% | -43% |
| 5 - Chemicals | 11% | 18% | 7% |
| Medical and Pharmacy Products | 14% | 8% | 15% |
| Plastic and Articles thereof | 13% | 3% | 7% |
| 6 - Manufactured Goods Classified by Material | 5% | 11% | 10% |
| Paper and Cardboard | 9% | 3% | 28% |
| Textile Yarn, Fabrics, Made up | -3% | 1% | -18% |
| Iron and Steel | 1% | 1% | -33% |
| 7 - Machinery and Transport Equipment | 4% | 45% | 39% |
| Machinery for Agriculture, Industry, Construction | 14% | 6% | 49% |
| Office Machines, Automatic Data Processing | 5% | 2% | -48% |
| Telecommunication Equipment | 20% | 7% | 55% |
| Electrical Machinery, Apparatus | 10% | 4% | -7% |
| Other Machinery and Equipment | 2% | 7% | 32% |
| Transport Equipment, Spare parts | -1% | 19% | 61% |
| 8- Miscellaneous Manufactured Articles | 25% | 9% | 129% |
| Clothing and Footwear | 25% | 1% | -4% |
| Professional and Scientific Machines | 14% | 2% | 20% |
| 9 - Commodities and Transactions nes | 29% | 5% | -49% |

Source: Calculated from Table 42 CBJ Monthly Bulletin.
*Calculated as a quarter of total 2000-2004 growth.

## Part III Impact on Business[46]

Having reviewed in detail the trade policy reforms implemented over the past fifteen years, we now examine industry performance during the period of liberalization. This brief section of the report looks at indicators of economy-wide changes associated with the trade reform period and draws some conclusions for future policy reform.

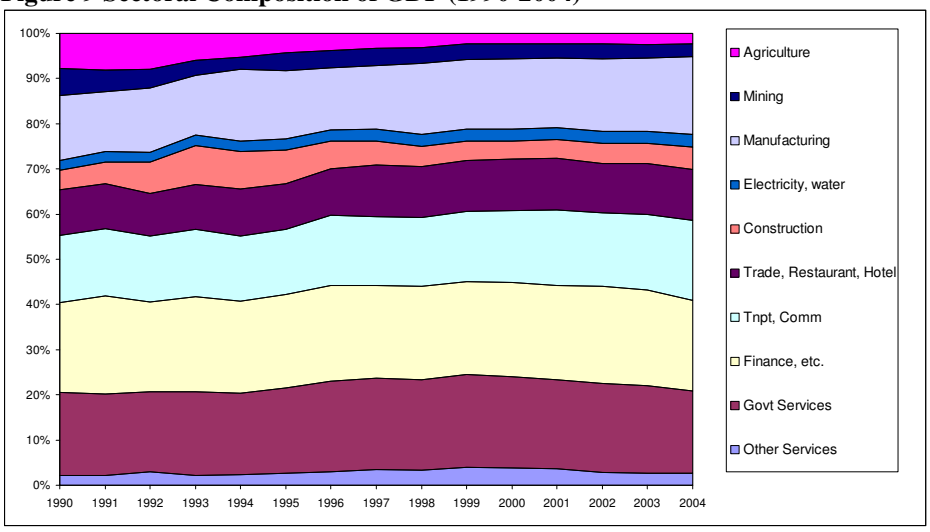
### 3.1 Economy-Wide Indicators of Performance

#### 3.1.1 Sectoral Changes

Figure 9 and Table 9 give a sense of the relative sectoral changes in the economy over the last 15 years. The largest changes are in the traditional agriculture and mining sectors. Agriculture's share of GDP declined from 8.0 percent in 1990 to 2.3 percent in 2004. Mining declined from 6.0 percent to 2.8 percent of GDP, mainly because of the generally constant volume of phosphate and potash production over the past 15 years. Furthermore, the volume of output of the other component of this sector, quarrying, has steadily declined since 1995.

Growth was distributed between manufacturing, electricity and water, construction, trade, restaurants and hotels, and transport and communications. Finance, insurance, real estate, government and social services remained unchanged. The two sectors most affected by trade liberalization have grown the most since 2000. Despite the decline in contribution to overall economic growth, as noted above, agriculture value added has increased by an average of 13 percent between 2001 and 2004, the highest recorded for any broad sector since 1990. Manufacturing enjoyed an annual average growth rate of 9 percent.

**Figure 9 Sectoral Composition of GDP (1990-2004)**




Source: CBJ Annual Statistical Series Table 35.

[46] Note that all values mentioned in this report reflect current prices, i.e. nominal values, unless otherwise stated.

**Table 9 Average Annual Sectoral Growth Rates at Constant Prices**

| | 1990 Share of | 2004 Share of | 1993-96 | 1997-2000 | 2001-04 |
|---|---|---|---|---|---|
| Agriculture, Hunting, Forestry | 8% | % | -7.9% | - | 12.6% |
| Mining and Quarrying | 6% | % | 3.4% | 3.1% | 3.8% |
| Manufacturing | 14% | % | 3.0% | 7.7% | 9.0% |
| Electricity and Water | 2% | % | 9.8% | 5.0% | 7.8% |
| Construction | 4% | % | 8.3% | - | 10.7% |
| Wholesale & Retail Trade, | 10% | % | 10.4% | 1.1% | 4.0% |
| Transport, Storage & | 15% | % | 5.0% | 7.9% | 7.6% |
| Finance, Insurance, Real estate and | 20% | % | 6.1% | 3.1% | 4.5% |
| Community, Social and | 18% | % | 6.9% | 9.7% | 6.4% |
| Total GDP at constant basic | 100% | % | 4.4% | 3.5% | 5.7% |

Source: CBJ Monthly Statistical Bulletin, Table 51 and Annual Statistical Series.

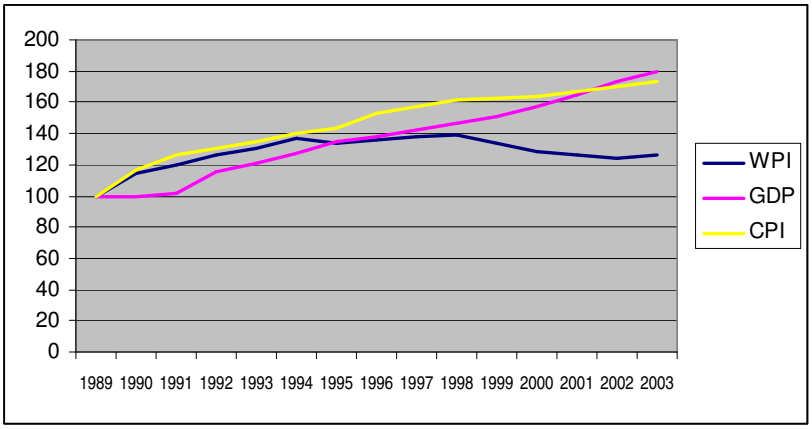
### 3.1.2 Wholesale Price Index

Trade reform in Jordan has lowered trade barriers on inputs for industry compared with more modest reductions on tariffs imposed on final consumer goods. Therefore, the cost of intermediate consumption would be expected to grow at a slower rate than the consumer price index (CPI). The wholesale price index (WPI) reflects to some degree the costs of intermediate consumption. Figure 10 below shows quite a remarkable gap between GDP and the CPI, and the WPI over time. Both WPI and CPI were growing faster than GDP in the early 1990s. However, WPI remained constant between 1994 and 1998 and actually fell between 1998 and 2002. Many factors help to explain this decline including an increasing labor force, the falling cost of borrowing and, possibly, better harvests. However, greater competitiveness engendered by trade reforms has likely played a role.

### 3.1.3 Total Factor Productivity

As previously suggested, trade liberalization acts to enhance the efficient use of inputs and factors of production, i.e. labor and capital. It is important to look beyond increases in the quantity of factors of production, through for example factor productivity, which can be measured over time. Total factor productivity (TFP) measures changes in output per unit of both capital and labor. That is, it measures changes in the quality of capital and labor over time – technical improvements due to training, better management and new technology.

**Figure 10 Price Indices, 1989-2003 (1992=100)**




Source: Derived from annual GDP, CPI and WPI statistical series of the CBJ.
Note: A new national WPI series supercedes the Amman-based WPI series from 2000.

According to World Bank studies released in 1994, 2001 and 2004, most of the economic growth in Jordan during 1980-2000 could be accounted for by expansion of capital and labor, rather than improvement in productivity. In fact, TFP actually declined in the 1980s and remained constant between 1996-2000. The most recent values of TFP are for 2001 and 2002 and show productivity gains comparable to the early 1990s. The productivity gains in the first half of the 1990s likely reflect the macroeconomic instability of the late 1980s which was followed by rapid control over inflation and exchange rate stability by 1992. The return of Jordanian workers from the Gulf in 1991 may have also brought new skills that contributed to the increase in TFP. More work is necessary to determine if the TFP gains have been sustained. However, it appears that economic reforms have started to improve economic efficiency.

**Table 10 Factor Contributions to GDP Growth and Total Factor Productivity (percent)**

| | Average Annual Growth Rates | | | | Growth Contributions | | | |
|---|---|---|---|---|---|---|---|---|
| | GDP | Physical Capital | Human Capital | Labor Force | Physical Capital | Human Capital | Labor Force | TFP |
| Period | | | | | | | | |
| 1981–85 (pre-crisis) | 6.4 | 6.1 | 9.4 | 5.1 | 2.7 | 3.1 | 1.2 | -0.6 |
| 1986–90 (economic crisis) | -0.9 | 6.5 | 3.7 | 4.8 | 2.8 | 1.2 | 1.1 | -6.1 |
| 1991–95 (World Bank I support) | 7.0 | 3.6 | 5.4 | 7.2 | 1.6 | 1.8 | 1.7 | 2.0 |
| 1996–00 (World Bank II support) | 3.1 | 2.8 | 2.9 | 4.1 | 1.2 | 1.0 | 0.9 | 0.0 |
| 2001–02 (WTO accession) | 4.6 | 2.6 | 2.6 | 4.1 | 1.2 | 0.8 | 0.9 | 1.7 |

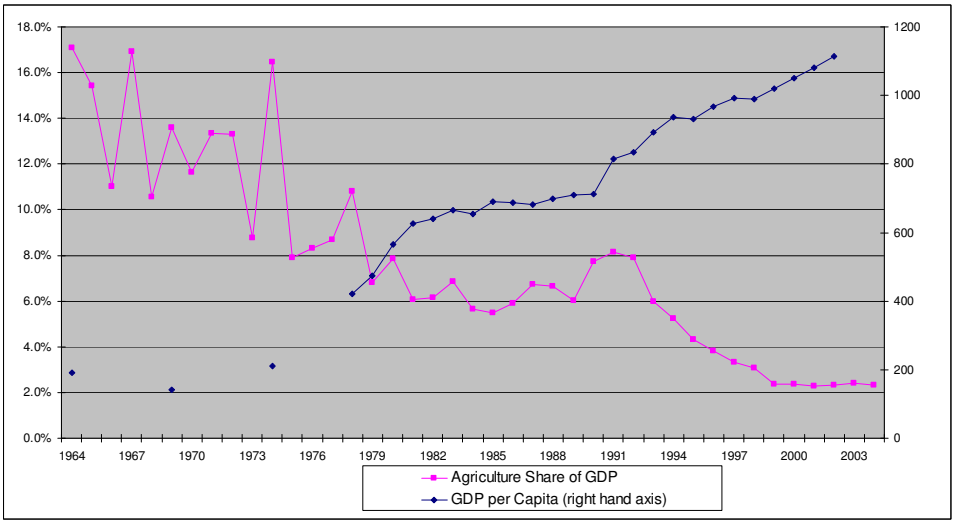
Source: WB 2004 Table II.4 page 18.

## 3.2 Impact on Agriculture[47]

As the discussion in Section 1.1 of this report highlighted, the WTO observation that changes to sector shares of GDP reflect long-term per capita income growth. However, this trend is subject to productivity changes caused by greater competition after trade liberalization.

Agricultural output in Jordan is volatile (see Figure 11). Good rain one season probably doubles the harvest in that year. It is likely that as irrigation has become more widespread dispersion has reduced. Agriculture's share of GDP stabilized at around 6 percent in the 1980s, then reduced rapidly in 1993 to a new and stable equilibrium level of 2.4 percent in 1999. The decline of agriculture in the 1990s appears to be due to more than the long run increase in per capita income as suggested by the WTO survey of literature. The increase in agriculture's share in 1990-1992 appears to have boosted GDP growth in 1991. However, the fall of agricultural output after 1992 had no effect on the growth of GDP per capita. It is tempting to conclude that lower barriers to agricultural imports accelerated the reduction in agriculture's share of GDP.[48]

**Figure 11 GDP per Capita (JD) and Agriculture Share of GDP (percent)**




Source: Derived from CBJ Annual Statistical Series, Table 38 and DOS population statistics.
Note: GDP is measured in current basic prices.

Despite increases in irrigated areas of fruit tree and vegetable production, a number of factors explain the decline in agricultural output. The National Strategy for Agricultural Development 2002-2010 refers to:

[47] See Kim Hjort's upcoming paper for the AMIR Program for a detailed examination of the impact of trade liberalization on the agriculture sector.
[48] The correlation coefficient between the two data series in Figure XX is -0.84 between 1979 and 2003, the period when agricultural trade barriers were declining.

1. Fragmentation of land holdings and encroachment of urban areas;
2. Variability of rainfall and declining water availability and quality;
3. Poor land management practices including uncontrolled grazing ;
4. Low productivity due to lack of research and training, lack of high yielding varieties and lack of scale economies; and
5. Weak marketing and management practices and institutions.

Against this background Jordan embarked on its program of trade liberalization beginning in 1994. Import tariffs were reduced and, in May 1995, quantitative restrictions on all agricultural imports were removed. Subsidies to farmers were limited to a ceiling of 10 percent of the value of agricultural output and for use in a non-price distorting manner. Subsidies include infrastructure, food subsidy programs, and agricultural development services such as research and training. Feed subsidies were removed and the monopoly status removed from the state-owned Agricultural Marketing and Processing Company for importing fresh vegetables and fruit in short supply in the local market.

Table 1 shows that tariffs on agricultural products have steadily declined since the early 1990s and imports have steadily increased across all food categories. Agricultural trade liberalization is well summarized in the introduction of a position paper submitted by Jordan for the Doha Round of WTO negotiations:

*Jordan is committed to the agricultural reform process and follows a strict economic adjustment program leading to internal and external trade liberalization as well as shifting of public sector responsibilities to the private sector. The country's average bound tariff is 30 percent as compared to the much higher rates of 58 percent to 75 percent of trading partner countries.*
*Prior to the country's membership in the WTO, sensitive agricultural commodities such as olive oil, sheep, poultry meat, tomato paste, citrus fruits and fresh milk were either directly or indirectly protected from foreign competition. Under Jordan's terms of accession to the WTO, such protection is no longer permitted. In the long run, Jordan expects competition to lead to more efficient and higher quality production, increasing Jordan's exports. One of the reasons Jordan joined the WTO was to take advantage of international trade opportunities. The policy challenge the country faces now is how to help the domestic producers adjust to the competition from abroad.*[49]

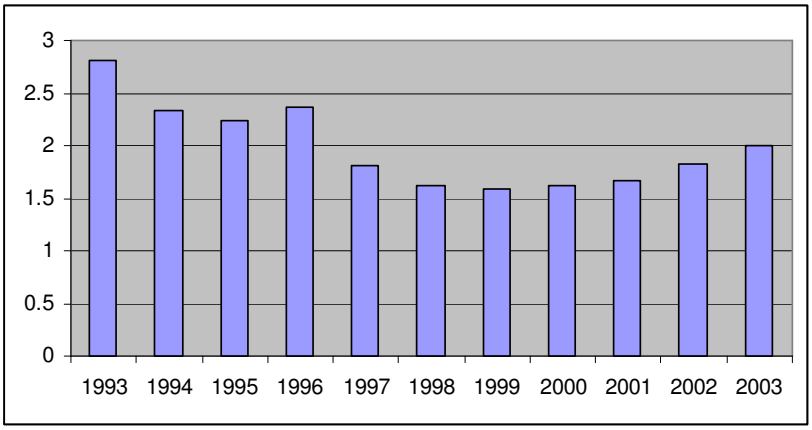
Consistent time-series data on agricultural productivity is difficult to piece together. The last in a series of annual surveys of agriculture was conducted in 1988. A comprehensive survey was conducted in 2003. The Ministry of Agriculture compiles annual production statistics on crops and livestock that includes material inputs and some crop employment data. This data is used by the Department of Statistics to derive agriculture's contribution to GDP.

[49] Proposal by Jordan on WTO Agriculture Negotiations to the Committee on Agriculture of the WTO, G/AG/NG/W/140, 22 March 2001, page 1.

Figure 12 below shows, what will become a familiar U-shape trend in this report, a representation of gross value added per employee. The index of real agricultural value added per total agricultural workers. The index fell from 154 in 1993 to 115 in 1998-99 and has subsequently increased to 146 in 2003. Employment steadily increased throughout this period from 55,000 in 1993 to 75,000 in 2000 since when it has remained relatively constant. Increasing output and constant employment have caused real agricultural output per worker to increase in 1999, and maintained agriculture's constant

**2.4 percent of growing real GDP.**

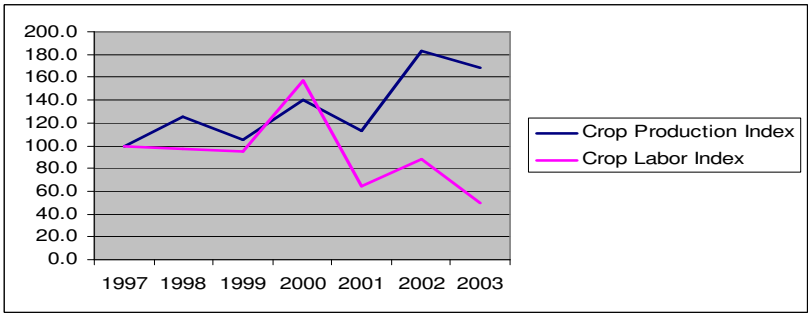
**Figure 12 Agriculture GDP Index (Constant Prices) per Agriculture Worker**




Source: Ministry of Agriculture, *Annual Report* (1998 and 2004), Tables 64 and 38.

The recent rise in productivity is also suggested by crop (fruit, vegetable and cereal) statistics provided on the Department of Statistics website. Plotting indices of nominal production and employment against each other shows a significant increase in productivity since 2000.

**Figure 13 Crop Productivity, 1997-2003**

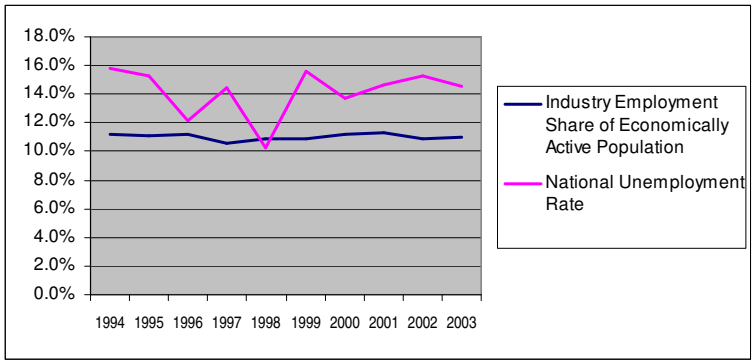



Source: DOS website.

### 3.3 Impact on Industry[50]

Total industrial employment increased by 30 percent over the past ten years of trade liberalization, from 109,000 in 1994 to 142,000 in 2003. This is a tremendous result given early fears of a collapse of manufacturing employment following trade liberalization. The following table compares this growth to growth of the national labor force and national unemployment. Despite the healthy increase, industrial employment just kept up with growth of the labor force, maintaining an approximate 11 percent share of the economically active population.[51] This was insufficient to have much impact on the unemployment rate.

**Figure 14 Industrial Employment**




Source: DOS, various unemployment and employment surveys, industry surveys and censuses.

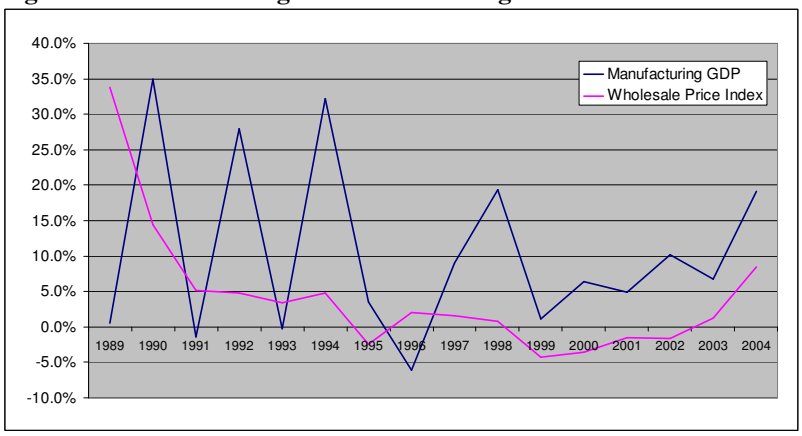
#### 3.3.1 Overview of Manufacturing Sector

Indicators of manufacturing performance are derived from the annual DoS Industry Survey. The survey began in 1994 and 2003 is the latest year results are available. Results for 2004 will be released in November 2005. Samples of establishments in different employment size classes are surveyed; all firms with more than 20 employees are surveyed.[52] The survey covers 23 subsectors at the two-digit level of the third revision of the International System of Industrial Classification (ISIC Rev.3) and 80 subsectors at the four-digit ISIC level.[53] Key performance indicators for the 23 subsectors are set out in Annex 4 of this report.

[50] The following sectors are included in the annual DOS survey of industry: oil and gas extraction, mining and quarrying, all manufacturing sectors and electricity, gas, steam and hot water supply.
[51] Economically active population are those persons 15 years and over who are either employed or unemployed and seeking work. Therefore children, students, retired persons and those unable to work are excluded.
[52] However, it appears that not all QIZ garment manufacturers have been surveyed since total garment employment and exports are reported as 17,207 and 139.5 million JD in 2003, respectively. The Ministry of Industry and Trade report these values for 2003 as 28,639 and 415 million JD respectively.
[53] The list of codes and industry descriptions is available from http://unstats.un.org.

Looking back beyond 1994 at the growth of nominal manufacturing GDP, Figure 15 shows the incredible volatility of manufacturing growth during the 1990s. Even while prices were stabilizing, manufacturing value-added experienced three successive annual shifts in growth rates from as low as -6 percent to as high as 35 percent. More work is needed to isolate the causes of this volatility.[54] It is unlikely that the steady reduction in tariffs over this period would cause such swings in value-added. However, World Bank findings that the rate of structural change reduces during and after a period of trade reform is supported by Figure 15.[55] Fortunately, the DOS survey data allows us to examine changes in manufacturing performance starting in 1994 – the last of the major peaks in manufacturing value-added growth.

**Figure 15 Annual Change in Manufacturing GDP and WPI**




Source: CBJ Annual Statistical GDP and WPI series.
Note: GDP measured in current basic prices.

**Table 11 Key Manufacturing Performance Indicators**

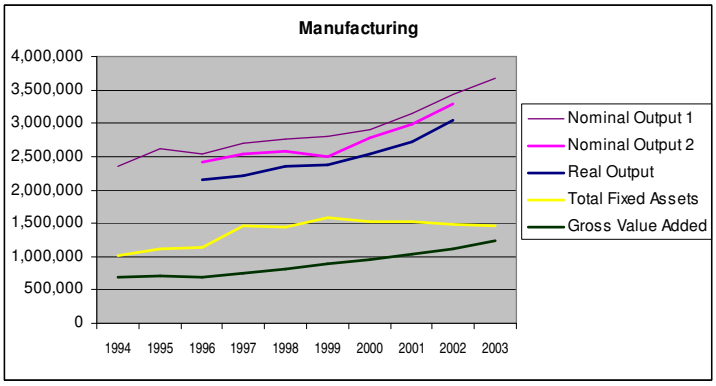
| Year | No. of Enterprises | No. of Employees | Compensation of Employees | Gross Output | Gross value added | Operating surplus | Fixed Capital Formation | Total Fixed Assets |
|---|---|---|---|---|---|---|---|---|
| 1994 | 12,358 | 95,843 | 181,905 | 2,358,438 | 689,373 | 259,296 | - | 1,022,860 |
| 1995 | 13,648 | 99,780 | 201,700 | 2,612,935 | 701,848 | 227,738 | - | 1,106,803 |
| 1996 | 13,972 | 102,254 | 209,185 | 2,533,068 | 681,762 | 183,227 | - | 1,133,749 |
| 1997 | 14,466 | 104,890 | 223,043 | 2,700,578 | 755,897 | 208,290 | 147,625 | 1,469,615 |
| 1998 | 14,936 | 105,029 | 245,415 | 2,771,247 | 805,536 | 224,400 | 118,043 | 1,445,784 |

[54] Possible reasons include survey problems, or volatility in a major share of of manufacturing output, e.g. fertilizer production.
[55] See WTO literature survey, infra footnote 7.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1999 | 18,066 | 112,240 | 265,219 | 2,793,147 | 896,662 | 270,156 | 95,683 | 1,573,732 |
| 2000 | 18,249 | 119,828 | 280,503 | 2,901,841 | 951,322 | 295,588 | 60,191 | 1,525,685 |
| 2001 | - | 125,777 | 288,780 | 3,138,736 | 1,035,005 | 351,561 | 68,178 | 1,522,799 |
| 2002 | - | 125,560 | 298,642 | 3,432,498 | 1,116,974 | 404,233 | 132,005 | 1,490,752 |
| 2003 | - | 127,997 | 310,116 | 3,679,020 | 1,233,130 | 496,810 | 111,307 | 1,471,261 |

Source: DOS Annual Industrial Survey.[56]

**Figure 16 Output, Fixed Assets and Gross Value Added (000 JD)**




Notes: Nominal Output 1 is gross output at current prices reported by the survey. Nominal Output 2 and Real Output measure gross output at current and constant prices and are reported by DOS from its GDP series.

The detail of Table 11 is depicted in figures discussed in the next few pages. However, it can be noted here that the average manufacturing firm size has reduced from 7.3 workers to 6.6 workers. The increase in the number of firms matches increases in employment. Both points suggest that employment has grown because of the establishment of new firms rather than expansion of existing firms. Perhaps the new firms are more competitive than existing firms in driving output growth.

Manufacturing employment has grown slowly since 1994 interrupted by two periods of zero growth. The first was in 1997-1998 and again in 2001-2002 when employment stagnated at around 127,000. Real output appears to have grown slowly between 1996 and 1999 and then accelerated up to 2002.[57] Figure 16 shows the decline in the growth path of nominal value-added in the first five years and an increase in the subsequent five-year period. This recent growth in output has not been driven by export growth. Exports

[56] All subsequent figures in this report are derived from the DOS Annual Industrial Survey and Services Survey.
[57] 1996-2002 is the period when data at constant prices is available from DOS.

as a share of total output have remained fairly constant at around 15 percent over the entire ten-year period. Export growth in new growth areas such as apparel and pharmaceuticals have been offset by a lack of export growth in the traditional sectors – fertilizers and minerals.

Gross profit, measured by *operating surplus* in the survey, has followed a more volatile path than output during the survey period with large losses in 1996 and 1998 followed by a significant rebound starting in 2000. However, as a share of total output, operating surplus has experienced a steady increase from 7.2 percent in 1996 to 13.5 percent in 2003. Overall, the relatively steady growth of employment and output have led to constant gross value added per employee over most of the period. Gross value added (GVA) represents the returns to capital and labor from production. It is measured as gross output less intermediate consumption of goods and services. Increasing GVA per employer is a measure of productivity – suggesting that capital per worker has increased or that capital and/or labor are being used more efficiently.

**Figure 17 Key Manufacturing Economic Indicators**

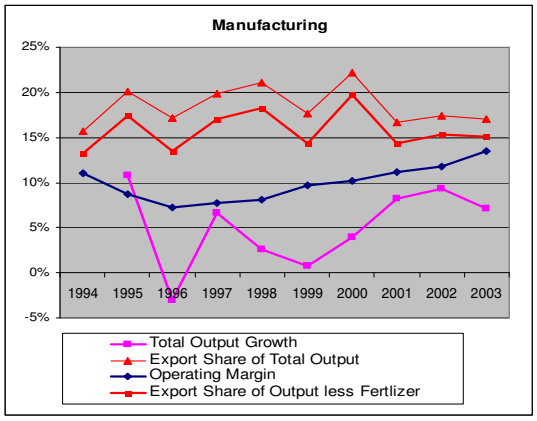



Figure 18 shows that GVA per worker grew during periods when higher output growth, i.e. 1995, 1997 and 2001-3 coincided with lower employment growth, i.e. 1997-98 and 2001-3. Estimating real GVA for 1994-95 and 2003 gives a net increase of GVA per employee over the whole ten-year period of 20.7 percent. This growth is generally confined to 1998 and 2002. This picture matches the results of the World Bank work on total factor productivity discussed above.

Source: DOS Annual Industry Survey.

**Figure 18 Real and Nominal GVA per Employee (000 JD)**

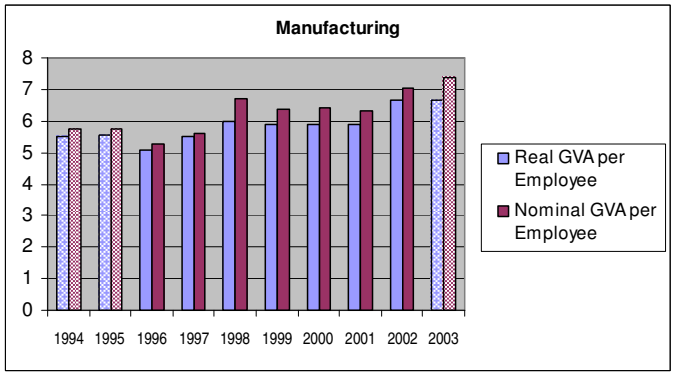


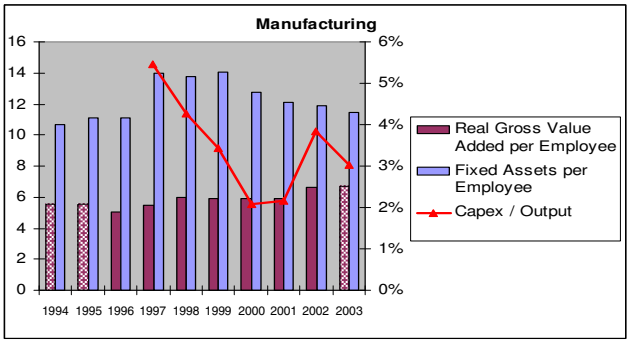

Figure 16 shows that total fixed assets have been relatively constant since 1997. Since then capital expenditure has just covered depreciation costs. This has led to increasingly efficient use of plant and equipment. The gross value added per fixed asset ratio has steadily

Notes: The author estimates GVA per employee values for 1994-5 and 2003.

increased from 0.51 in 1997 to 0.84 in 2003. The ratio was only 0.67 in 1994. However, workers have less capital to work with and together with the fall in capital expenditure as a share of output is likely leading to degrading plant and equipment and lower labor productivity. Possible reasons for the decline in capital expenditure include overinvestment in capacity in the early 1990s and lack of confidence in future manufacturing profitability.

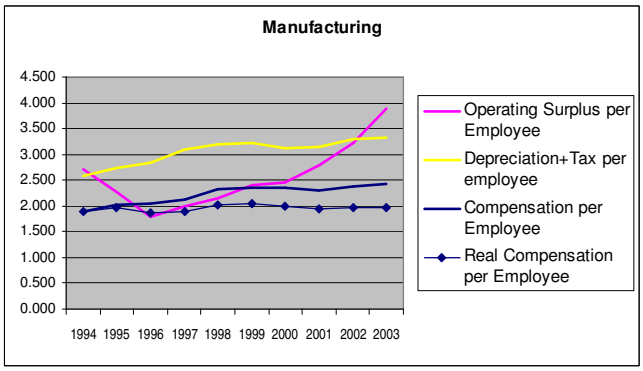
How has value added been distributed between capital and labor?[58] That is, what are the trends in employee compensation per employee and operating surplus per employee. Figure 20 below plots nominal and real compensation per worker against nominal operating surplus per worker. Real compensation per worker has remained constant over the period at about 2,000 JD per year, peaking in 1999 at 2,037 JD. Depreciation costs and business income tax have followed a similar net path as compensation. Operating surplus per employee has shown the opposite trend, steadily declining by a total of 18 percent between 1995 and 1999 before increasing significantly by a total of 70 percent by 2003.

**Figure 19 GVA per Employee and Capital Expenditure (000 JD)**




Notes: The author estimates gross value added data for 1994-5 and 2003.

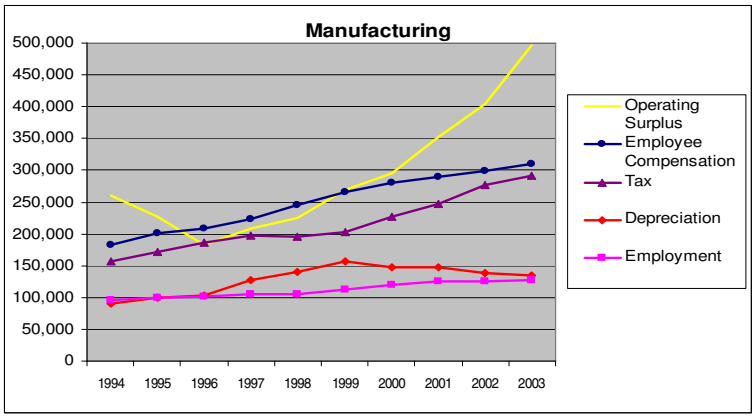
**Figure 20 Factor Returns per Employee (JD)**




[58] DOS calculates gross value added as the sum of worker compensation, operating surplus, depreciation costs and business income tax.

The large increase in operating margin has been at the expense of both employee compensation and capital expenditure. The current increasing labor force will likely sustain low real wages. But short-term profit taking will eventually reduce total factor productivity. Figure 21 below shows the changes in nominal values of the elements of value added over time. In addition to operating margins, the only other social return to have increased is business income tax. Figure 21 shows the bizarre nature of income tax collection in Jordan over time. While operating surplus was declining in 1994-96, tax collections continued to increase. Total tax collections even surpassed total operating surplus in 1996. Thereafter, taxation has not kept pace with rising profits. In fact, employment appears to be a better proxy to estimate business income tax collections rather than operating surplus.

**Figure 21 Elements of Gross Value Added and Employment Growth (000 JD)**

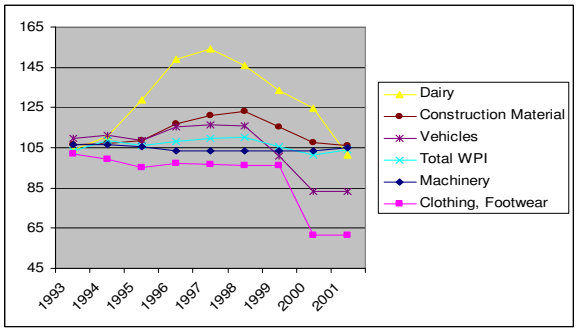



In summary, capital productivity has steadily increased by a total of 50 percent since 1997 when measured by GVA per total fixed assets. Labor productivity has been constant over most of the ten-year period with growth limited to two years, 1998 and 2002. Labor productivity increased by a net 20 percent over the ten years when measured by real GVA per worker. The returns to each factor of production amplify their productivity increases. Real compensation per worker increased by just 3.2 percent over the entire ten-year period. Operating surplus as a share of total fixed assets (return on assets) increased by 33 percent over the ten-year period to significant 33.8 percent of total fixed assets. However, the total return on assets was as low as 14.2 percent in 1997. Operating surplus as a share of total output (operating margin) increased by 23 percent over the ten-year period.

These results raise a number of general concerns:

- Constant average employee compensation has not accelerated employment growth.
- The large rise in profitability has not been accompanied by similar increases in business income taxes as measured by DOS.
- Fixed assets are being depreciated. This will eventually impact negatively on output.

**Figure 22 Selected Elements of Amman Wholesale Price Index (1992 = 100)**




Source: CBJ annual statistical series.

### 3.4 Manufacturing Sub-Sectors

Each of the large manufacturing sub-sectors follows the general trends outlined above for the whole of manufacturing. Annex 4 contains tables for the 23 main subsectors.

1. The largest sub-sector is food products and beverages enjoying steady employment growth from 17,307 to 26,522 during 1994-2003. Profitability slumped by 80 percent between 1994 and 1998 and only recovered its 1994 level in 2003. Exports have not recovered their peak of 100 million JD in 1997. Wages have remained flat since 1998.

2. Local garment manufacturers experienced a maximum 40 percent drop in profitability between 1994 and 1999, but have since enjoyed spectacular output, employment and profitability growth. Output has increased almost 2,000 percent and exports have jumped from 18 percent of total output to 81 percent. Wages have increased 50 percent between 1997 and 2003 to 128 JD per worker per month. Export garment production in QIZs did not start on any scale until 2000. Therefore, the earlier losses are due to domestic firms losing domestic sales to competing lower price imports. As Figure 22 shows wholesale prices of garments and footwear dropped 40 percent between 1993 and 2000.

3. Employment in non-metallic mineral products has been stable at around 14,000 over the past ten years. Output, capital expenditure and profitability declined during 1995-2000 with a maximum profit drop of 35 percent. Thereafter, employee compensation declined while profits fully recovered to their 1994 level. Exports have been slow to recover their previous 16 percent share of output.

4. Simple fabricated metal products have enjoyed steady employment growth over this period but profits dropped by 85 percent between 1994 and 1996, before almost recovering their former level by 2003. Payrolls have remained low and stagnant over

this period, averaging 92.5 JD per month per worker in 2003. Export levels are erratic but appear to have recovered their previous share of output.

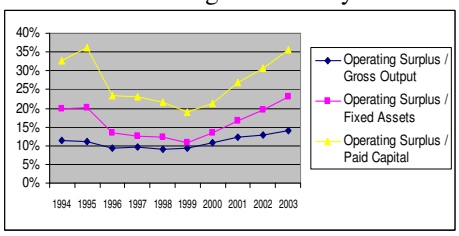
5. Furniture and not elsewhere classified manufacturing has remained relatively stable over this period. Profitability was at its lowest point in 1996 but quickly recovered to a remarkably constant 15 percent-16 percent for the next six years. Employment has hovered around 10,000 over this entire period. Output fell less than 10 percent but has since increased by 45 percent and exports have increased rapidly since 1999 from 9 percent of total output to 22 percent.

### 3.4.1 Ranking Manufacturing Performance

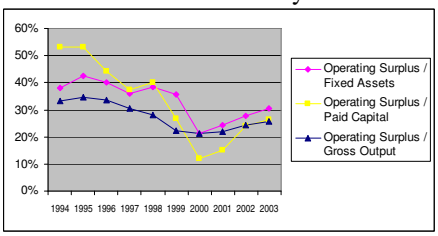
In order to compare tariff changes with manufacturing performance, changes in key performance indicators over time are compared with recent tariffs (see Tables 14 and 15). All manufacturing subsectors surveyed by DOS are separated into two groups – large firms and small firms as measured by 2003 output. Subsectors in each group are ranked according to their 2003/1994 change in GVA per employee and compared with changes in profitability and exports (see the notes to Table 17 for an explanation of these indicators). Positive changes in exports suggest those subsectors operating at levels of international competitiveness.

Box 3. Measuring Profitability

Manufacturing Profitability




Services Profitability




The figures above show three measures of profitability that can be calculated from survey results. The Department of Statistics defines operating surplus as equivalent to earnings before interest and tax, i.e. gross output less emp\oyee costs less intermediate consumption less depreciation less indirect taxes (license fees and sales taxes). Generally an investor is interested in the return on equity. Total sharehholders' equity is not reported in survey results. Paid-in capital is reported but does not accurately reflect shareholders' equity or book value. For instance, it excludes retained earnings.

As the charts above show, operating surplus/paid-in capital is the most volatile of the three measures. Paid-in capital does not change significantly over time, therefore any change in operating surplus is fully reflected in changes in the measure. In addition private firms in Jordan have an incentive to underreport their paid-in capital. Incorporation fees and compulsory Chamber of Industry or Commerce fees are based on the size of paid-in capital. In comparison with the 11 percent to 53 percent range of return on paid-in capital values depicted above for services, the pre-tax profit reported to the Amman Stock Exchange as a share of shareholders' equity ranged between 2 percent

and 9 percent for services and -5 percent and 9 percent for manufacturers in the period 1998-2002.

Return on assets ignores liabilities and compares earnings with all the tangible and intangible assets employed by the firm. The survey reports a good proxy for total assets – fixed assets. However, capital/output ratios vary considerably among different industries – reducing the comparative value of the measure. Moreover, returns to labor are not accounted for by this measure. Therefore, for the purposes of this study, operating surplus as share of gross output is used to measure profitability. This is equivalent to a form of operating margin.

It is not possible to accurately list the tariff that each subsector faces on competing imports. Subsector descriptions are classified by ISIC Revision 3, which are more aggregated than traded goods classified by HS at the eight-digit level. Therefore, a range of tariffs is listed in the table. In general, tariffs are either 0 percent or less than 5 percent on imported goods that are used for industrial purposes. Goods used for final consumption are subject to the maximum 30 percent tariff in each range.

The following observations can be made during 1994-2003:

- Nominal ouput increased by about 5 percent a year and nominal labor productivity by about 3 percent a year without any overall loss in profitability.
- Firms only marginally increased exports as a share of domestic sales between 1994 and 2003.
- Operating surplus as a share of total output for the whole sector was 14 percent in 2003. The average profit level increased by 21 percent between 1994-96 and 2001-03.
- A weak relationship exists between increasing productivity over the period and increasing profitability.
- There is little apparent relationship between subsectors performing well and their level of remaining tariff protection from imports.

### 3.4.2 Group A - At Risk Subsectors

The group of declining or at risk sectors is very small – only five large subsectors and seven small subsectors out of a total of 80 subsectors surveyed. The list is defined as those subsectors experiencing falls in at least two key indicators during 1994-2003. Arguably all the large subsectors are capital-intensive industries relying on economies of scale for efficient production. The only one of these industries in which Jordan has a natural comparative advantage is the manufacture of fertilizer. This is the largest industry in Jordan outside electricity production and oil refining. As an export industry, it has not been affected by Jordan's reduction of tariff protection, rather by international fertilizer prices. However, the monopoly nature of fertilizer production does not appear to have helped industry performance.[59]

[59] The majority government-owned Jordan Phosphate Mines Company (JPMC) owns the Jordan Fertilizer Company and is a joint venture partner in Jordan's other fertilizer producer, the Nippon-Jordan Fertilizer Company. JPMC has a monopoly on the mining and processing of phosphate – the main ingredient in

### 3.4.2.1 Large Manufacturing Subsectors (Table 16)

Output in the manufacturing of motor vehicle bodies and trailers has increased since 1998 but has not reached the high levels achieved in 1994 and 1995. Gross value added per employee was particularly high in 1994 due to the unusually large reported output that year. GVA per employee in 1995 is in the normal range for the industry and shows only a -1 percent decline by 2003. This industry has recently attracted foreign investment, the assembly of Land Rovers near Aqaba.

Pulp and paper production in Jordan has steadily declined since 1994. This is a capital-intensive industry relying on low cost supplies of wood or chemical pulp. Jordanian production is likely to be small scale and suffering from imports subject to the low tariff range of 3 percent-10 percent. During 1994-2003 imports have increased from 43 million to 86 million JD.[60]

The other two declining subsectors are food-related, which is another area of comparative disadvantage in Jordan. Output in the dairy industry has increased by 113 percent over the ten-year period while profitability and productivity have fallen. Capital expenditure has also been increasing over the last three years. As tariffs on dairy products continue to decline there will likely be domestic producers exiting this industry. Dairy product imports have increased from 31 million JD to 77 million JD over this period.

**Table 12 At Risk Manufacturing Subsectors (Large and Small)**

| | **2003 Outp** | **Chang e** | **200 3** | **Chang e** | **Chang e** | **Exp ort** | **2002 Tarif** |
|---|---|---|---|---|---|---|---|
| Manufacture bodies for motor | | -41% | 20% | 63% | -1% | - | 30% |
| Manufacture of fertilizers and | 229, | -13% | -1% | -114% | -46% | - | 5% |
| Manufacture of pulp, paper and | | -27% | 6% | -41% | -43% | 56% | 3- |
| Manufacture of dairy products | | 113% | 4% | -49% | -37% | 3% | 5- |
| Manufacture of soft drinks; | | 18% | 0% | -106% | -23% | 1% | 30% |
| Tanning and dressing of leather | | -64% | -2% | -130% | -38% | - | 10% |
| Manufacture of plastics in primary | | -69% | 6% | -70% | -34% | 2% | 20% |
| Manufacture of tanks, reservoirs | | 14% | 7% | -458% | -29% | -2% | 30% |
| Manufacture of knitted and | | -41% | 9% | -34% | 9% | 2% | 20% |
| Quarrying of stone, sand and clay | | -36% | 19% | -20% | -8% | 4% | 30% |
| Manufacture of footwear | | -24% | 16% | -33% | -9% | 60% | 30% |
| Manufacture structural non- | | 1% | 11% | -58% | -24% | 5% | 30% |
| Industries No Longer Surveyed | Late st year Outp ut | Chang e Output from 1994 | Late st Prof it Mar gin | Change Profit Margin from 1994 | Chang e GVA per Emplo yee | Latest year surveyed | |

fertilizer production. JPMC also produces sulphuric acid, phosphoric acid, di-ammonium phosphate and aluminum fluoride.

[60] Data includes articles made of paper such as tissues that are not included in the manufacture of pulp and paperboard category.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Manufacture of malt liquors and malt | 900 | -88% | 28% | -9% | | | 1998 |
| Manufacture of veneer sheets; manufacture of plywood, laminboard, particle board and other panels and boards | 165 | 27% | -1% | -21% | | | 1996 |
| Manufacture of accumulators, primary cells and batteries | 6,519 | -23% | 9% | -34% | | | 1999 |
| Manufacture of television &radio receivers,sound or video recording or reproducing apparatus,&associated goods | 26,834 | 115% | 3% | -24% | -11% | | 1997 |
| Manufacture of musical instruments | 8,884 | 13% | 9% | -5% | | | 1995 |

Source: Derived from DOS Industry Survey 1994-2003.

Casual observation also shows the large number of mineral water and fruit juice products on sale in the Kingdom. Competition is driving down prices and thus productivity and profitability in both these food subsectors. Imports of flavored sweetened beverages increased from 144,000 JD in 1994 to an incredible 18.4 million JD in 2003.

Some sectors are no longer surveyed by the Department of Statistics. These five subsectors either suffered large falls in output or profits during the brief period they were surveyed starting in 1994. The manufacture of sound and vision recording and playback equipment had a relatively large output of 26.8 million JD in 1997.

**3.4.2.2 Small Manufacturing Subsectors (Table 17)**

Adjustment has been harder on smaller firms than on larger firms. Half of the group has not recovered their level of 1994 profitability. However, only two industries had average operating losses, i.e. negative average profitability in the period 2001-2003. Facing a 10 percent tariff by 2002, leather tanning has lost most of its output, profits and export sales. The tanning industry is monopolized by Jordan Tanning Company which enjoys a concession until 2002. Casting of basic steel and iron has experienced a 38 percent fall in profitability to -19 percent of sales in 2003. However, output increased by 450 percent, productivity by 50 percent and exports by 16 percent. It is difficult to explain this inconsistency since the iron and steel industry has traditionally been controlled by a cartel in Jordan.

Six small manufacturing industries can be regarded as declining over two or more of the performance indicators (see Table 12). These industries are discussed in turn:

1. The manufacture of metal tanks, reservoirs and containers of metal is a very small subsector that saw a very large fall in profitability to 7 percent of sales in 2003. Output growth was only 14 percent higher in 2003 than in 1994. With Jordan's large pool of engineering skills this would appear to be an industry that Jordan could develop. Perhaps lower metal working wages in Egypt and Syria reduce Jordan's competitiveness. Imports of these products increased from 1.3 million JD to 6.2

million JD over this period, indicating sufficient competition for a domestic industry an output of 3.2 million JD in 2003.

2. Other concerns exist for traditional Jordanian industries. Output of the quarrying of stone and sand declined by 36 percent, profitability fell by 20 percent as did productivity by 8 percent. This industry faces naturally high import protection through high land transport costs in addition to a 30 percent import tariff on competing products. Similarly, an industry four times larger in terms of output is the cutting and shaping of stone. It has experienced modest reductions in profitability and productivity likely due to competition from imported stone. Imports of stone have increased from about two to eight million JD between 1994 and 2003. A new trade association JSTONE is working to improve industry performance. Price competition has worked to increase cut stone exports from 2 percent to 16 percent of domestic sales.

3. One of the declining industries is footwear manufacturing. Industry representatives have lobbied the Ministry of Industry and Trade for maintaining protection on footwear imports. It appears that price competition has reduced footwear output value by 24 percent and profits by 33 percent. However, footwear profitability is still above the entire industrial average of 14 percent of output and exports increased to 60 percent of domestic sales in 2003. Clearly the industry is able to produce profitably at world prices.[61]

4. Another industry seeking to maintain or increase protection is the carpet and rug making subsector. This industry increased productivity by 53 percent leading to an 82 percent increase in average profits, and exported the equivalent of half of its domestic sales in 2003.

5. Manufacturing of primary plastics in basic forms has suffered a 70 percent fall in output and profitability. This could be due to declining tariffs on competing products from Gulf countries under GAFTA.

6. Structural non-refractory clay and ceramic products (bricks, tiles, etc.) have seen almost no growth in output, a 58 percent decline in profitability and a 24 percent decline in productivity. Like stone, these products face high 30 percent import tariffs and high land transport costs. It is likely the industry has moved to significantly reduce prices in order to compete with imports. This has helped the industry to increase exports to about 15 percent of domestic sales in 2001-2003.

[61] Approximately 4.4 million JD in customs duty should have been collected from the 14.5 million JD of footwear imports in 2004. This represents about 3,500 JD for each of the 1,258 surveyed workers in the footwear industry and is equivalent to total operating surplus plus worker compensation for the subsector.

### 3.4.3 Group B – Adjusting Subsectors

**Table 13 Adjusting Manufacturing Sub-sectors**

| | **Output (000JD)** | **Change Output** | **2003 Profit Margin** | **Change Profit Margin** | **Change GVA per Employee** | **Export Growth** | **2002 Tariff** |
|---|---|---|---|---|---|---|---|
| Manufacture of medical and orthopedic equipment | 12,255 | 510% | 12% | -2% | 106% | 35% | 0% |
| Manufacture of lifting and handling equipment | 6,476 | 116% | 6% | -5% | 37% | 87% | 0-30% |
| Manufacture of bakery products | 110,933 | 73% | 14% | -12% | 22% | 1% | 30% |
| Manufacture of grain mill products | 86,513 | 112% | 6% | -13% | 6% | 1% | 0-10% |
| Printing | 36,834 | 67% | 9% | -15% | 70% | 11% | 0-30% |
| Manufacture of domestic appliances n.e.c. | 22,678 | -18% | 10% | -21% | 23% | 21% | 5-30% |
| Manufacture of articles of concrete, cement and plaster | 88,308 | 79% | 12% | -28% | 45% | 2% | 30% |
| Manufacture of knitted, crocheted fabrics and articles | 4,991 | -41% | 9% | -34% | 9% | 2% | 20% |
| Production, processing of meat and products | 89,813 | 337% | 12% | -38% | 128% | 5% | 30% |
| Casting of iron and steel | 7,525 | 451% | -19% | -38% | 50% | 16% | 30% |
| Production, collection and distribution of electricity | 291,240 | 92% | 9% | -39% | 33% | 0% | monopoly |
| Manufacture of other special purpose machinery | 1,684 | 221% | 12% | -45% | 27% | 62% | 0-30% |
| Manufacture of tobacco products | 216,156 | 101% | 2% | -46% | 63% | 23% | 70-100% |
| Manufacture of other chemical products n.e.c. | 8,282 | 171% | 3% | -301% | 35% | 20% | 3-5% |
| Total Industry | 4,335,479 | 58% | 14% | 21% | 35% | 6% | |

Source: Derived from DOS Industry Survey 1994-2003.

This group of manufacturing subsectors has experienced declining and/or low profits resulting in below average profit margins in 2003, while increasing output and efficiency. The table is sorted by change in profit margins. This group of industries has reacted to increasing competition from imports by increasing output and employee productivity but has not recovered its former level of profitability. Some productivity increases have been significant: meat products, tobacco and printing have been able to improve value added per employee by between 63 percent and 128 percent. However, price competition has likely impacted negatively on their profit levels. Many of the subsectors still enjoy relatively high levels of protection: bakery products, articles of cement, meat processing, domestic appliances. Continuing profit reductions could put these subsectors in the at risk category.[62]

### 3.4.4 Group C – Successful Manufacturing Subsectors

**Table 14 Successful Manufacturing Subsectors**

| | Output | Change Output | 2003 Profit | Change Profit | Change GVA per | Export Growth | 2 T |
|---|---|---|---|---|---|---|---|
| Manufacture of | 8,689 | 4779% | 21% | -28% | 477% | 343% | C |
| Service activities related | 1,717 | 2913% | 46% | -1% | 116% | 0% | |
| Manufacture of non- | 5,792 | 1170% | 22% | 247% | 241% | 99% | 3 |
| Treatment of metals; | 2,627 | 839% | 27% | 53% | 31% | 0% | C |
| Distilling, rectifying, | 25,079 | 619% | 23% | 121% | 375% | 19% | 1 |
| Manufacture of electric | 10,341 | 525% | 20% | 875% | 98% | -6% | 3 |
| Manufacture of basic | 97,057 | 409% | 35% | 565% | 491% | 452% | 3 |
| Manufacture of wearing | 171,384 | 308% | 40% | 69% | 146% | 449% | 3 |
| Manufacture of insulated | 68,821 | 273% | 9% | 24% | 170% | 88% | 3 |
| Publishing of newspapers, | 50,311 | 234% | 26% | 19% | 103% | 7% | C |
| Manufacture of cutlery, | 5,214 | 214% | 10% | 116% | 54% | 9% | 1 |
| Manufacture of prepared | 37,338 | 185% | 14% | 198% | 148% | 12% | 3 |
| Manufacture of other non- | 5,377 | 153% | 20% | 109% | 178% | -48% | 3 |
| Manufacture of other | 65,896 | 111% | 16% | 79% | 81% | 24% | C |
| Manufacture of paints, | 58,788 | 103% | 8% | 135% | 35% | 27% | C |
| Other manufacturing | 11,679 | 101% | 11% | 326% | 303% | 398% | C |
| Manufacture of basic iron | 145,037 | 88% | 14% | 158% | 111% | 5% | 2 |
| Manufacture of | 168,002 | 64% | 27% | 45% | 53% | 86% | C |
| Manufacture of other | 45,874 | 43% | 11% | 162% | 173% | 67% | 3 |
| Manufacture of electricity | 4,559 | 25% | 18% | 164% | 108% | 532% | 3 |

Source: Derived from DOS Industry Survey 1994-2003.

Table 14 lists the 20 top performing subsectors in terms of increases in output, productivity and the export share of domestic sales, sorted by output growth. The list represents subsectors that have outperformed all other subsectors. Apparel, pharmaceuticals and articles of paper are no surprise. Basic chemicals build on Jordan's

[62] Government-owned Jordan Cement Factories Company had the exclusive right to extract and produce cement and its byproducts for 50 years until 2001. In December 2002 about half of the company's shares were sold to a French cement company.

traditional Dead Sea mineral industry. Paint and varnish manufacturing is a large industry now and adds further value to the traditional chemical industry. Insulated cables is a new industry established by listed company National Cables and Wire Manufacturing. Manufacturing of lighting equipment, electricity control apparatus (with domestic appliances in the adjusting sector) are improving productivity behind their 30 percent tariff protection. Manufacture of basic iron and steel and other fabricated metal products (nails, wire, sinks, pots and pans) has expanded. Certainly in the case of iron and steel, import protection has helped its performance.

There appears to be little relationship between tariff changes and performance. Some subsectors under high protection, e.g. distilling, have actually increased their exports. However, statistics do not relate changes in tariff protection over time to subsector performance – they merely note the approximate range of current tariffs. Furthermore, each subsector has unique characteristics that dictate its response to changing tariffs. For example, some goods have high transport costs so they are essentially non-tradable goods, e.g. treatment of metals, and manufacture of some basic iron and steel products. Furthermore, many sectors are starting from a low base and so experience high growth rates.

### 3.4.5 Group D – Other Subsectors

**Table 15 Manufacturing Subsectors with Declining Productivity**

| | Output | Change Output | 2003 Profit Margin | Change Profit Margin | Change GVA per Employee | Export Growth | |
|---|---|---|---|---|---|---|---|
| Cutting, shaping and finishing of stone | 44,665 | 38% | 20% | -6% | -8% | 14% | |
| Manufacture of other food products n.e.c. | 47,053 | 46% | 12% | 0% | -19% | 21% | |
| Manufacture of basic precious and non-ferrous metals | 33,314 | 77% | 22% | 17% | -35% | 43% | |
| Manufacture of structural metal products | 61,953 | 36% | 19% | 3% | 0% | 1% | |
| Manufacture of luggage, handbags, and harness | 674 | -40% | 31% | 15% | -19% | -8% | |
| Manufacture of other articles of cork, straw, plaiting | 1,385 | -25% | 35% | 24% | 6% | 0% | |
| Manufacture of made-up textile articles, except apparel | 4,108 | -10% | 28% | 45% | -1% | -33% | |
| Manufacture of wooden containers | 871 | -57% | 25% | 103% | -58% | 0% | |
| Sawmilling and planing of wood | 4,620 | 164% | 17% | -6% | -85% | 6% | |
| Total Industry | 4,335,479 | 58% | 14% | 21% | 35% | 6% | |

Source: Derived from DOS Industry Survey 1994-2003.

Table 15 is a mixed list of subsectors experiencing declining productivity in terms of GVA per employee while enjoying above average profit margins and modest output growth. Four of the subsectors are very small and experienced a net fall in output, explaining the declining productivity. Sawmilling would be in the list of declining industries if output had not increased by 164 percent. Many firms within the manufacture of other food products subsector (sauces, pickles, etc.) are likely declining. The subsector has below average profitability and declining productivity. However, some firms have managed to increase exports.

Of more interest are the three other large subsectors: stone cutting, precious metals and structural metal products. Stone cutting has become less efficient and less profitable. It would join its allied subsector, quarrying, as a declining subsector if output had not increased 38 percent and exports increased by 14 percent. Gold manufacturers are not struggling but are included because of their decline in productivity. These firms appear to have increased employment more than output value in order to expand export production under the GSP and the JUSFTA.

A common characteristic of some of the subsectors in this category is their enjoyment of some remaining level of protection. Stone cutting enjoys a high tariff and the high cost of road transport slows demand for imported product. Certain food products and structural metal products enjoy high tariff protection.

**Table 16 1994-2003 Economic Indicators of Large Manufacturing Firms**

| | 2003 Output (000 JD) | % Change in Output 1994-2003 | 2003 Profit Margin | % Change in Profit Margin 1994-2003 | % Change in GVA 1994-2003 | Difference Exports / Domestic Sales 1994 - 2003 | 2002 Import Tariff |
|---|---|---|---|---|---|---|---|
| Manufacture bodies for motor vehicles; trailers, semi-trailers | 22,944 | -41% | 20% | 63% | -1% | -1902% | 30% |
| Manufacture of pulp, paper and paperboard | 20,348 | -27% | 6% | -41% | -43% | 56% | 3-10% |
| Manufacture of domestic appliances n.e.c. | 22,678 | -18% | 10% | -21% | 23% | 21% | 5-30% |
| Manufacture of fertilizers and nitrogen compounds | 229,013 | -13% | -1% | -114% | -46% | -1535% | 5% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Manufacture of vegetable and animal oils and fats | 88,660 | -13% | 14% | 53% | 37% | -25% | 30% |
| Manufacture of soft drinks; production of mineral waters | 79,078 | 18% | 0% | -106% | -23% | 1% | 30% |
| Preparation and spinning of textile fibres; weaving of textiles | 26,970 | 19% | 28% | 11% | 95% | -42% | 0% |
| Manufacture of furniture | 67,623 | 24% | 20% | 15% | 26% | 11% | 30% |
| Manufacture of cement, lime and plaster | 174,726 | 30% | 29% | 66% | 127% | -9% | 30% |
| Manufacture of structural metal products | 61,953 | 36% | 19% | 3% | 0% | 1% | 0-30% |
| Cutting, shaping and finishing of stone | 44,665 | 38% | 20% | -6% | -8% | 14% | 30% |
| Manufacture of other articles of paper and paperboard | 45,874 | 43% | 11% | 162% | 173% | 67% | 30% |
| Manufacture of other food products n.e.c. | 47,053 | 46% | 12% | 0% | -19% | 21% | 0-30% |
| Manufacture soap, detergents; polishing, perfume | 84,798 | 49% | 15% | 71% | 85% | 53% | 22% |
| Manufacture of plastics products | 106,399 | 56% | 14% | 63% | 32% | 5% | 3-22% |
| Mining of chemical and fertilizer minerals | 341,241 | 56% | 23% | 5% | 74% | -300% | monopoly |
| Manufacture of refined petroleum products | 597,981 | 57% | 5% | 59% | 150% | 0% | monopoly |
| Manufacture of pharmaceuticals, medicinal, botanical products | 168,002 | 64% | 27% | 45% | 53% | 86% | 0-5% |
| Printing | 36,834 | 67% | 9% | -15% | 70% | 11% | 0-30% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Manufacture of bakery products | 110,933 | 73% | 14% | -12% | 22% | 1% | 30% |
| Manufacture of basic precious and non-ferrous metals | 33,314 | 77% | 22% | 17% | -35% | 43% | 20-30% |
| Manufacture of articles of concrete, cement and plaster | 88,308 | 79% | 12% | -28% | 45% | 2% | 30% |
| Manufacture of basic iron and steel | 145,037 | 88% | 14% | 158% | 111% | 5% | 20-30% |
| Production, collection and distribution of electricity | 291,240 | 92% | 9% | -39% | 33% | 0% | monopoly |
| Manufacture of corrugated paper, paperboard and containers | 40,637 | 93% | 15% | 23% | 69% | 3% | 30% |
| Manufacture of tobacco products | 216,156 | 101% | 2% | -46% | 63% | 23% | 70-100% |
| Manufacture of paints, varnishes, printing ink and mastics | 58,788 | 103% | 8% | 135% | 35% | 27% | 0-5, 30% |
| Manufacture of other fabricated metal products n.e.c. | 65,896 | 111% | 16% | 79% | 81% | 24% | 0-30% |
| Manufacture of grain mill products | 86,513 | 112% | 6% | -13% | 6% | 1% | 0-10% |
| Manufacture of dairy products | 75,837 | 113% | 4% | -49% | -37% | 3% | 5-30% |
| Manufacture of other general purpose machinery | 25,241 | 153% | 13% | 12% | 1% | -25% | 0-30% |
| Manufacture of prepared animal feeds | 37,338 | 185% | 14% | 198% | 148% | 12% | 3-30% |
| Publishing of newspapers, journals and periodicals | 50,311 | 234% | 26% | 19% | 103% | 7% | 0% |
| Manufacture of insulated wire and cable | 68,821 | 273% | 9% | 24% | 170% | 88% | 3-30% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Manufacture of wearing apparel, except fur apparel | 171,384 | 308% | 40% | 69% | 146% | 449% | 30% |
| Production, processing and preserving of meat and meat products | 89,813 | 337% | 12% | -38% | 128% | 5% | 30% |
| Manufacture of basic chemicals, not fertilizers/nitrogen compounds | 97,057 | 409% | 35% | 565% | 491% | 452% | 3-5% |
| Distilling, rectifying, blending of spirits; ethyl alcohol production | 25,079 | 619% | 23% | 121% | 375% | 19% | 180% |
| Total Industry | 4,335,479 | 58% | 14% | 21% | 35% | 6% | |

Source: Derived from DOS Industry Survey 1994-2003.
Notes: See notes of Table 17.

**Table 17 1994-2003 Economic Indicators of Small Manufacturing Firms**

| | 2003 Output (000 JD) | % Change in Output 1994-2003 | 2003 Profit Margin | % Change in Profit Margin 1994-2003 | % Change in GVA 1994-2003 | Difference Exports / Domestic Sales 1994-2003 | 200 Imp rt Tar |
|---|---|---|---|---|---|---|---|
| Building and repairing of pleasure | | 38% | 40% | 11% | 255% | 0% | 10% |
| Manufacture of luggage, handbags, | | -40% | 31% | 15% | -19% | -8% | 30% |
| Manufacture of wooden containers | | -57% | 25% | 103% | -58% | 0% | 5% |
| Manufacture of other articles of cork, | | -25% | 35% | 24% | 6% | 0% | 3 |
| Manufacture of other textiles n.e.c. | | 296% | 21% | -11% | 5% | 12% | 0- |
| Manufacture of other rubber products | | 73% | 26% | 45% | 174% | -2% | 0- |
| Manufacture machinery for food, | | 172% | 24% | 6% | 16% | -1% | 0% |
| Manufacture of other special purpose | | 221% | 12% | -45% | 27% | 62% | 0- |
| Service activities related to printing | | 2913 | 46% | -1% | 116% | 0% | |
| Manufacture rubber tyres, tubes; | | 134% | 10% | -70% | -4% | 0% | 30% |
| Treatment of metals; general | | 839% | 27% | 53% | 31% | 0% | 0% |
| Manufacture of machine-tools | | 483% | 22% | 169% | 296% | - | 0% |
| Manufacture of machinery for | | 103% | 25% | 65% | 42% | -11% | 0- |
| Manufacture of tanks, reservoirs and | | 14% | 7% | - | -29% | -2% | 30% |
| Tanning and dressing of leather | | -64% | -2% | - | -38% | -81% | 10% |
| Manufacture of made-up textile | | -10% | 28% | 45% | -1% | -33% | 30% |
| Manufacture of glass and glass | | 28% | 8% | 70% | 46% | -10% | 0- |
| Manufacture of electric motors, | | 62% | 15% | 28% | 90% | 4% | 0- |
| Manufacture of electricity distribution | | 25% | 18% | 164% | 108% | 532% | 30% |
| Sawmilling and planing of wood | | 164% | 17% | -6% | -85% | 6% | 0% |
| Manufacture of knitted and crocheted | | -41% | 9% | -34% | 9% | 2% | 20% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Manufacture of cutlery, hand tools | | 214% | 10% | 116% | 54% | 9% | 10% |
| Manufacture of other non-metallic | | 153% | 20% | 109% | 178% | -48% | 30% |
| Manufacture of non-structural non- | | 1170 | 22% | 247% | 241% | 99% | 30% |
| Manufacture of lifting and handling | | 116% | 6% | -5% | 37% | 87% | 0- |
| Casting of iron and steel | | 451% | - | -38% | 50% | 16% | 30% |
| Manufacture of pesticides and other | | -28% | 16% | 78% | 79% | 4328 | 10 |
| Manufacture of other chemical | | 171% | 3% | - | 35% | 20% | 3-5 |
| Manufacture of jewellery and related | | 164% | 28% | -16% | 24% | 45% | 10 |
| Manufacture of agricultural and | | 4779 | 21% | -28% | 477% | 343% | 0% |
| Manufacture of parts, accessories for | | 131% | 10% | -49% | -15% | -60% | 30% |
| Manufacture of plastics in primary | | -69% | 6% | -70% | -34% | 2% | 20% |
| Manufacture of electric lamps and | | 525% | 20% | 875% | 98% | -6% | 30% |
| Quarrying of stone, sand and clay | | -36% | 19% | -20% | -8% | 4% | 30% |
| Other manufacturing n.e.c. | | 101% | 11% | 326% | 303% | 398% | 0- |
| Manufacture of medical and | | 510% | 12% | -2% | 106% | 35% | 0% |
| Manufacture of footwear | | -24% | 16% | -33% | -9% | 60% | 30% |
| Manufacture of structural non- | | 1% | 11% | -58% | -24% | 5% | 30% |
| Manufacture of carpets and rugs | | 4% | 17% | 82% | 53% | 22% | 30% |
| Processing and preserving of fruit and | | 48% | 6% | 182% | -2% | -24% | 30% |
| Manufacture of builders' carpentry | | 34% | 24% | -6% | 23% | 18% | 30% |
| Manufacture of cocoa, chocolate and | | 104% | 8% | -39% | -13% | 20% | 30% |
| Total Industry | | 58% | 14% | | 35% | 6% | |

Source: Derived from DOS Industry Survey 1994-2003.

Notes: Change in Output equals the percentage change between Output in 2003 and 1994. Change in Profitability equals the percentage change between Average Operating Surplus/Output in 2001-2003 and Average Operating Surplus/Output 1994-1996. Change in Gross Value Added per Employee equals Percentage Change between GVA/Employee in 2004 and GVA/Employee in 1994 or nearest later year. Export Growth equals Exports/Domestic Sales in 2003 less Exports/Domestic Sales in 1994. 2002 Tariffs – In general, products with a tariff range of 0-30% apply low tariffs if the product is for an industrial purpose and a 30% tariff if for final consumption.

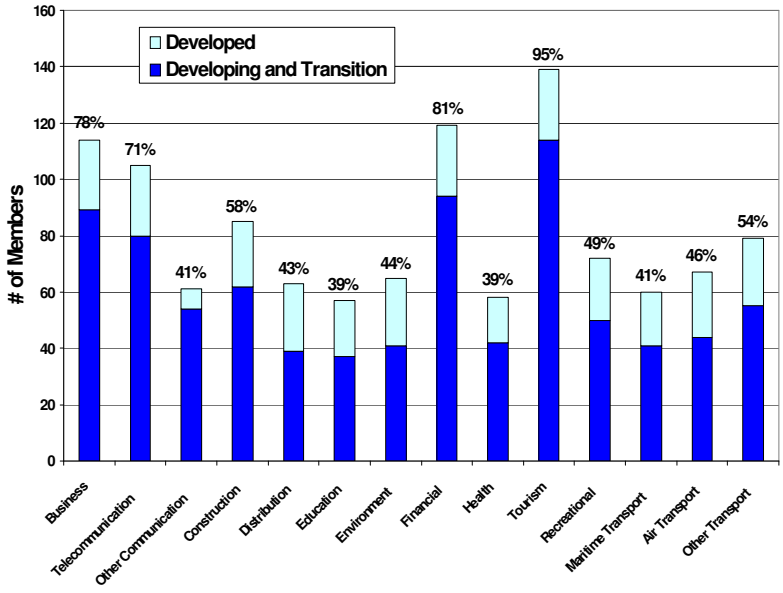
### 3.5 Liberalization of Trade in Services[63]

During the Uruguay Round of WTO multilateral trade negotiations member countries agreed for the first time on a mechanism to commit to maximum levels of restrictions on international trade in services. The General Agreement of Trade in Services (GATS) sets out basic principles of transparency and non-discrimination in the treatment of services provided by foreign entities to residents. Member countries list in their GATS Schedule of Commitments those subsectors that they choose to be bound by GATS rules. For each committed subsector the member country must explicitly describe any restrictions in order for those restrictions to remain in effect. Restrictions are categorized as market access measures of national treatment measures. Market access measures place limits on the number, value or volume of service or service providers that may operate in a country. Common measures include residency or nationality requirements for providers and maximum equity limits on foreign investors. Member countries may also list

[63] Only for-profit services are discussed in this report.

measures that derogate from the most-favored-nation rule, i.e. permitting preferential treatment for certain countries.

**Figure 23 Sectoral Commitments under the GATS**




Source: Rudolf Adlung and Martin Roy, *Turning Hills into Mountains? Curre Commitments under GATS and the Prospects for Change,* WTO Economic Research ar Statistics Division, Staff Working Paper ERSD-2005-01 March 2005 Chart 1, page 8.

Newly acceding countries, such as Jordan, have committed not to raise restrictions in almost all services sectors. Out of 160 service subsectors, Jordan has listed commitments in all but 47 subsectors. Among the sectors excluded from the schedule are air, rail and road transport; cargo handling and shipping agents, postal services, integrated engineering services, dental and vetinerarian services. On average newly acceding countries have committed to the same number of subsectors as developed member countries (about 103 out of a total of 160 subsectors). Member countries have made the most commitments in sectors that have likely demonstrated the most benefits from foreign participation – tourism, finance, business and telecom.

### 3.5.1 Jordan's GATS Commitments

Jordan has made a number of so-called *horizontal* commitments affecting all subsectors. These comprise:

1. conditions on the entry of natural persons to work in Jordan, e.g. the managing director of entities established in the Kingdom must be resident;
2. a minimum capital investment of 50,000 JD for all foreign investors;
3. conditions on the purchase of real estate in the Kingdom by foreigners.

Jordanian legislation provides for a large number of specific market access and national treatment restrictions on trade in services. Restrictions applicable to those sectors that Jordan has committed under GATS are described in Jordan's Schedule of Commitments. These specific commitments deal with three main types of market access restrictions:

1. Restrictions on cross-border provision of services include the requirement that certain services may only be provided by persons domiciled in the Kingdom and registered with the relevant professional association. Most professionals are subject to this requirement.
2. The Labor Law provides the requirement that certain occupations are reserved for Jordanian nationals. Exceptions are sometimes provided for nationals of the other countries if Jordanians are permitted to work in those countries. These sectors include law, architects, engineers, geologists, dentists, pharmacists, real estate agents, accountants, all sales professions, and hair stylists.
3. Restrictions on establishing a physical presence in Jordan to provide services, i.e. direct foreign investment, include the requirement that the service be provided by Jordanian nationals as a natural person rather than a company that can be owned by foreigners, e.g. real estate agents. More prevalent and restrictive is the requirement that foreigners may not own more than 50 percent of the equity in the Jordanian establishment. The 50 percent equity cap is applied to engineering, construction and contracting; leasing equipment; wholesale and retail trade; employment agencies; media; restaurants; travel agencies; sea, air and land transport; warehousing and freight forwarding.

It is important to note two points. Firstly, trade in a particular subsector still takes place even if the subsector is not listed in the Schedule. Exclusion from the schedule means that Jordan is free to impose additional restrictions on trade in that subsector. The Government has extensively regulated foreign access to air and land transport in Jordan – but it is not willing to bind future policy to current restrictions. Secondly, restrictions on trade in service sectors, whether listed or not in Jordan's Schedule are not set in stone. New legislation may reduce the degree of these restrictions. WTO members automatically enjoy any unilateral liberalization of restrictions on trade in service subsectors upon which Jordan has made GATS commitments. Of course, the Government may not increase restrictions on any subsector committed under GATS.

### 3.5.2 Correlating Trade Restrictiveness and Performance

**Table 18 Correlating TRIs Against Performance**

| | 1994-2003 Change in | | |
|---|---|---|---|
| | Output | Profit | GVA |
| Change in TRI | 0.20 | -0.21 | 0.09 |
| TRI in 2003 | -0.23 | 0.20 | -0.13 |

Table 18 compares changes in profit margins, output and GVA per worker over the period 1994-2003 with a trade restrictiveness index (TRI). The TRI provides a score from 1 to 4+ for each subsector based on market access and national treatment restrictions imposed on the subsector in 1998 and 2003. The score attempts to represent the level of restrictiveness that the Government has imposed on foreign provision of services in the subsector.

A score of 1 means that the sector is fully liberalized to foreign service providers. The service may still be regulated but this is done so in a transparent and non-discriminatory manner. Banking, management consulting and information technology are examples of these sectors. A score of 2 means that the subsector is subject to some restrictions with minor expected effect on foreign providers. Such restrictions include requiring commercial presence in Jordan, or requiring that investors operated through a Jordanian incorporated company. Examples are secondary education and hospital services.

A score of 3 means that foreign provision is permitted but is subject to limiting restrictions. In general these restrictions are the 50 percent equity cap or the nationality requirement. An asterisk in the 1998 column means that the subsector was relatively free of legislated restriction. However, the subsector was likely subject to the 50 percent foreign equity cap. At the time legislation did not clearly define which sectors were subject to the cap. A score of 4 means that the sector is closed to foreign providers. In general, such sectors were regulated through bilateral agreements. Such sectors include road transport and investigative firms. A plus sign means that the subsector is subject to further restrictions than the normal score.

Correlations between the TRI and the performance indicators are weak, but the positive and negative signs of coefficients are in the right direction. Any relationship between these variables is not likely to be linear and so some other function should be fitted to the data. Nevertheless, profit margins are more likely to have decreased and output to have increased over time in any subsector the larger the degree of liberalization of that subsector. Conversely, currently high restrictions on foreign competition are associated with decreasing output and increasing profit over time.

### 3.5.3 Foreign Provision of Services in Jordan

WTO members have agreed on four modes of service delivery. In mode 1 the service is physically sent to the consuming country from the provider located in another country, e.g. mailing engineering plans. In mode 2 the consumer travels to receive the service in a foreign country, e.g. outward tourism. In mode 3 the foreign provider establishes a

commercial presence in the consuming country. Mode 3 covers all foreign direct investment. In mode 4 the provider travels to the consuming country to deliver the service for a limited period of time, e.g. consulting services.

The value of foreign direct investment (FDI) is usually captured by countries during the process of registering foreign investors. The Jordan Investment Board (JIB) collects very aggregated values of FDI from foreign investors receiving incentives from JIB. Unfortunately, the breakdown of categories readily available sheds little light on which subsectors are benefiting from liberalization. Furthermore, sectors not eligible for incentives are not recorded at all. Excluded sectors include: banking, finance, insurance, communications, construction, air and road transport, distribution, electricity and gas.

**Table 19 Sectoral Share of JIB Approvals and Actual Total FDI**

| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|
| Industry | 65% | 59% | 38% | 67% | 25% | 87% | 92% |
| Hotels | 24% | 31% | 43% | 18% | 71% | 7% | 1% |
| Agriculture | 5% | 4% | 5% | 5% | 0% | 3% | 2% |
| Hospitals | 6% | 1% | 10% | 6% | 4% | 3% | 2% |
| Sea and Rail Transport | 0% | 1% | 3% | 0% | 0% | 0% | 0% |
| Conventions | 0% | 0% | 0% | 0% | 0% | 0% | 2% |
| Recreation | 0% | 3% | 1% | 4% | 0% | 0% | 1% |
| | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Total FDI (million JD) | 11 | 256 | 220 | 112 | 558 | 71 | 40 |

Source: JIB and Duanjie Chen, *Reformulating the Tax Incentive Program in Jordan*, AMIR Program, 2004.

The peak in 2000 represents the sale of 41 percent of Jordan Telecom to France Telecom valued at 360 million JD and a 71 million JD potash investment. The relatively liberal hotel and hospital sectors are well represented by approvals, but little can be learned about services FDI because of poor data.

Estimates of modes 1 and 2 are indicated by payments and receipts in the balance of payments. Again the figures are very aggregated, into just three categories: travel, transport and other services. The travel item mainly comprises tourism and is based on passenger surveys. The transport item relies on customs declarations. Despite the large errors it is clear that Jordan engages in a large volume of cross-border trade in services and enjoys a healthy trade surplus. Transport export earnings in 2003 represented 21 percent of total gross output of the transport sector. Other exported services represented about 8 percent of total non-transport services gross output in 2003. It appears that both Jordan's exports and imports of other services have declined since WTO accession. The increase in transport payments is likely due to the increasing volume of QIZ exports.

**Table 20 Jordanian Cross-Border Trade in Services**

| JD Million | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|---|---|---|---|---|---|---|---|
| Receipts | | | | | | | |
| Travel | 549 | 549 | 564 | 512 | 496 | 557 | 578 |
| Transport | 273 | 218 | 209 | 211 | 182 | 204 | 215 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Other services | 410 | 472 | 434 | 437 | 372 | 311 | 244 |
| Payments | | | | | | | |
| Travel | 282 | 250 | 252 | 274 | 298 | 296 | 268 |
| Transport | 224 | 181 | 171 | 173 | 186 | 188 | 549 |
| Other services | 264 | 465 | 493 | 416 | 363 | 356 | 292 |
| Net position | | | | | | | |
| Travel | 267 | 298 | 312 | 238 | 198 | 261 | 310 |
| Transport | 49 | 37 | 39 | 38 | -3 | 16 | -334 |
| Other | 146 | 6 | -59 | 20 | 9 | -45 | -48 |
| Net Workers' remittances | | 947 | 1035 | 1168 | 1289 | 1373 | 1424 |
| Note: | | | | | | | |
| Overall errors etc: | -39 | -305 | 21 | 224 | 58 | 40 | 380 |

Source: CBJ Monthly Statistical Bulletin.

### 3.6 Service Sectoral Performance

This section of the report will firstly summarize the main performance trends for these five sectors and then rank the 55 subsectors in the same way manufacturing subsectors were compared. Those subsectors are as follows:

1) Banking and Insurance (2 subsectors)
2) Construction (4 subsectors)
3) Hotels, restaurants, professional and other services (30 subsectors)
4) Transport, warehousing and communications (11 subsectors)
5) Wholesale and retail trade (8 subsectors)

Unfortunately, two of the largest subsectors, banking and telecommunication, are not further disaggregated. Data for banking and insurance is incomplete and only covers the period 1998-2003 (no 1998 data for insurance). Employment data is missing for many sectors for one or more of the years 1999-2002. No data is reported for construction in 2002. Missing employment data was estimated from GDP sectoral employment statistics. The number of firms and export revenue data is collected.

Real output and value-added data used in this report are provided by DOS from their GDP data series. The GDP data attempts to cover all economic activity by broad economic sector. The difference between the survey and GDP data sets is quite distinct. The GDP data gives total nominal output of profit-making firms as 5.6 billion JD and the survey data gives the equivalent figure of 4.3 billion JD. Moreover, as discussed in section 3.5.1, following, the two data sets show different output trends over time. More research needs to be conducted with DOS to isolate the elements of each data set. However, for the purposes of this study, work will rely upon the more detailed results of each subsector included in the survey data. It is important to keep in mind that the survey is a sample survey and does not include every manufacturer or service firm.

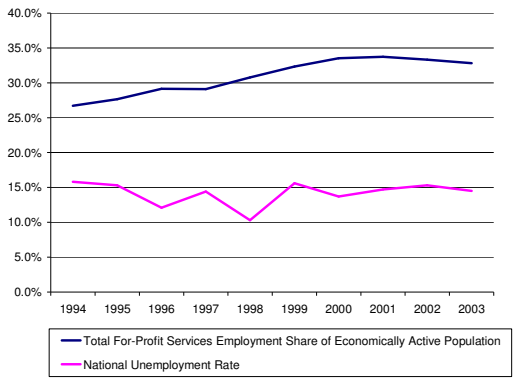
### 3.6.1 General Trends

Gross output (total sales) of manufacturing and services are of a similar size (about 4.3 billion JD in 2003). Looking at the sum of the for-profit service subsectors surveyed by DOS, nominal output grew marginally faster than manufacturing output between 1994 and 2003. Services output growth has not been negative and has followed a similar path to manufacturing output growth, with annual growth slowing to 4 percent in 1997 and 2000 and reaching 11 percent in 2002. It is interesting to note that services growth has lagged manufacturing growth by exactly one year. This is likely due to more conservative consumption of services following a bad year by manufacturers whether used as inputs into production and for final consumption.

However, real output data for all profit-making services used by DOS to determine GDP shows a different picture. Real output actually decreased a total of 2 percent between 1996 and 1998 and then increased by 21.5 percent between 1998 and 2002.

Given its more labor intensive production practices, services employed three times more workers than manufacturing in 2003. Services employment has grown faster than manufacturing employment.

**Figure 24 Services Employment and Unemployment**




In 1994 services employed two and half times more workers than manufacturing. Similarly with manufacturing, services employment growth has stagnated since 2000. As a share of the total labor force services employment increased from about 26.7 percent in 1994 to 33.5 percent in 2000, and has fallen to 32.8 percent in 2003. Figure 24 shows the growth path of services employment and its recent reductions. This has caused unemployment to remain at 15 percent of the total labor force.

Source: Derived from DOS crude activity rate and the annual Employment and Unemployment Survey.

**Figure 25 Annual Growth of Nominal Output and Profit - Services**

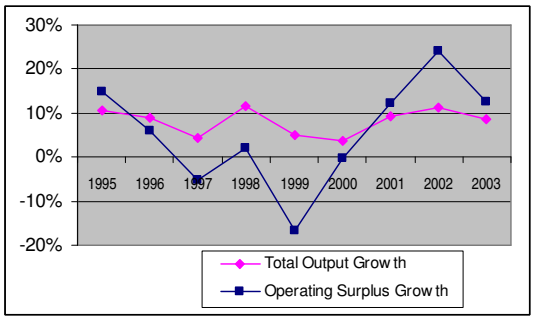
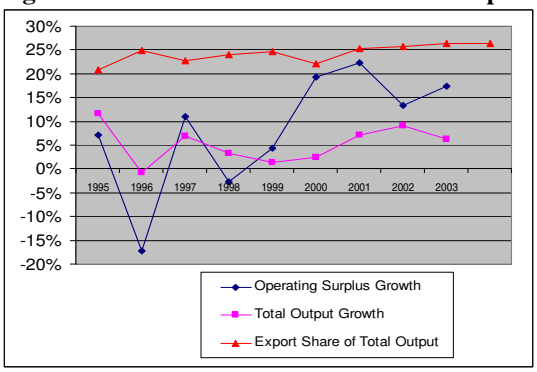



**Figure 26 Annual Growth of Nominal Output and Profit - Manufacturing**




Source: Derived from Annual DOS Services Survey.

Rising output has not been sufficient to increase productivity. Real gross value added per employee steadily declined until 2000 and has been constant since 2000 at about 6,400 JD.

How has GVA per employee been distributed between capital and labor? The figures below describe how real compensation per worker actually maintained a constant level during the period that GVA per worker and operating surplus declined – 1998-2000. The net increase in real compensation per worker was 27 percent over the entire ten-year period. Most of this increase occurred in 1998. Operating surplus per worker fell from 2,860 JD in 1995 to 1,638 in 2000, and had only increased to 2,429 in 2003. In contrast to manufacturing, recent services operating surplus growth has not been at the expense of both depreciation and tax, and compensation per worker.

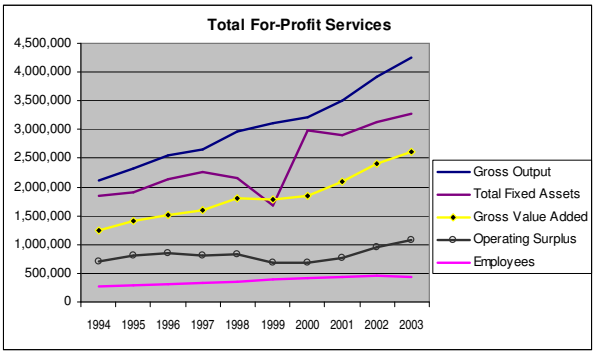
Possible reasons for this more equitable distribution of the gains from recent growth include:

- Average compensation is lower in the services sector and at only about 150 JD per month was more susceptible to labor arguments to increase wages to cover cost of living increases.
- Services firms may be smaller and employees and owners may have stronger profit sharing arrangements than in manufacturing firms.
- The service sector receives less tax incentives from the government, and so an increase in profits will be taxed.

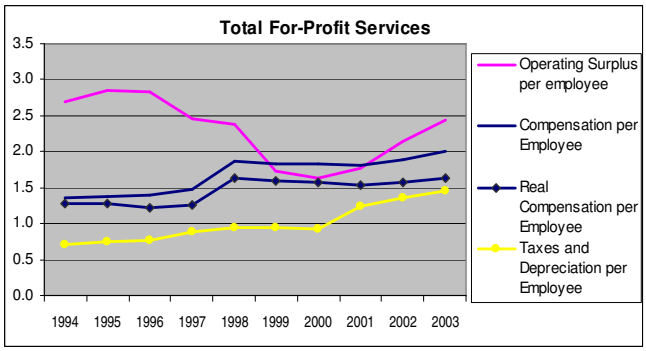
- Capital Investment has not declined over the ten year liberalization period. Total fixed assets per worker have increased from 7,000 to 8,000 JD between 1994 and 2004.

**Figure 27 Output and Productivity Trends in Total For-Profit Service Sector**

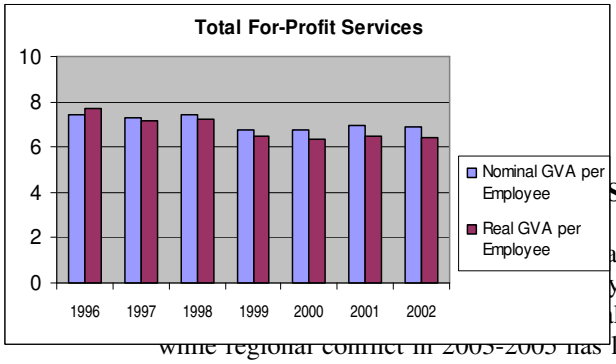
**(a) Output, Profit, Fixed Assets, GVA and Employment**



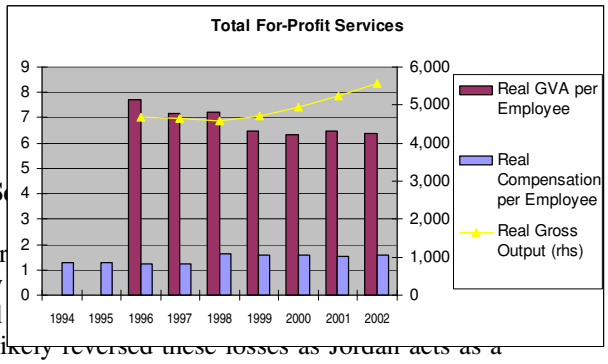

**(b) Factor Returns per Emp**




**(c) Labor Productivity**




**(d) Labor Productivity and Compe**

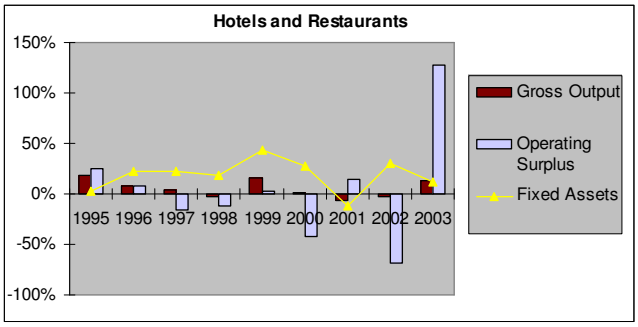



while regional conflict in 2003-2005 has likely reversed these losses as Jordan acts as a logistical focal point for reconstruction in Iraq. Output in the hotel and restaurant sector remained constant until 1998. Real output growth improved significantly in 1999 and 2000. However, the deteriorating regional tourism environment brought real output back to 1997 levels. Over this time employment increased in the hotel sector and remained constant in the restaurant sector. This caused a long-run downward trend in real GVA per worker. The extent of the downturn in tourism can be seen from the decline in real GVA per worker from 4,442 JD in 2000 to 2,440 JD in 2002. Profitability has generally shown a continuous negative growth path, increasing to any degree only in 2003. The only indicator to increase has been fixed assets and the association burden of increasing depreciation costs due to the hotel construction boom. Foreign provision of hotel services is fully liberalized and committed under GATS. Foreign investors may own no more than 50 percent of the equity of restaurants, however.

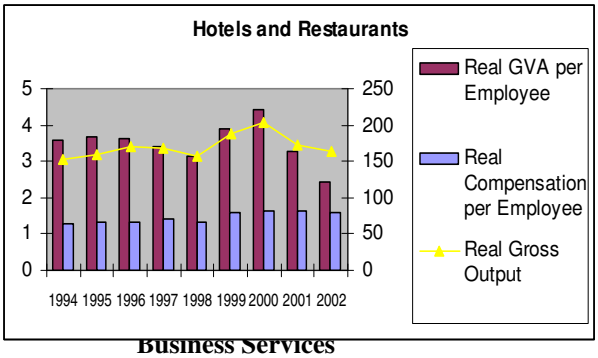
[64] Given that real GVA per worker, as measured by the DOS GDP data series, decreased by about 15% then only increases in nominal GVA per worker that are greater than 15% from the survey data should be considered a positive productivity gain.

**Figure 28 Hotel and Restaurant Subsector Performance**

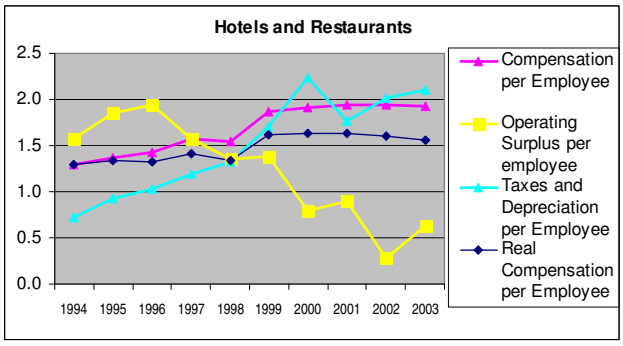
**(a) Annual Change in Output, Profit, Fixed Assets**




(b) Labor Productivity and Compensation




(c ) Factor Returns per Employee



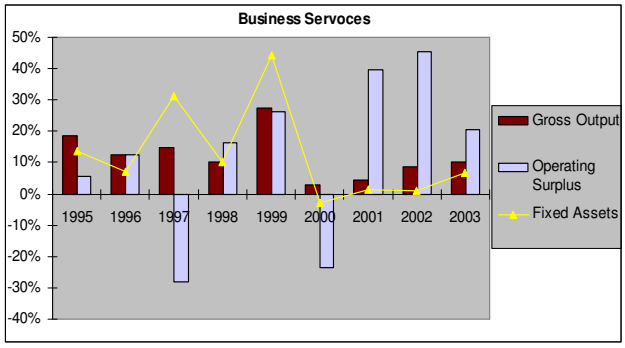

**Business Services**

This large sector includes professional services, private health and education, real estate services, equipment rental and entertainment services. As would be expected for so many subsectors real output has grown smoothly but modestly at 3 percent per annum. However, employment increased by 130 percent between 1994 and 2001 leading to deteriorating productivity – real GVA per worker almost halved over this period. Real compensation per worker increased until 1999 but the pressure of ever declining profitability led to falling real wages. No growth in employment over the past three years has enabled profits to approach their former level of around 20 percent of gross output, while real wages have reached their former 1994 level. Total assets increased significantly until 1999. The surge of capital investment in 1999 was a 100 million JD increase in real estate management fixed assets. Capital investment only increased again in 2003.

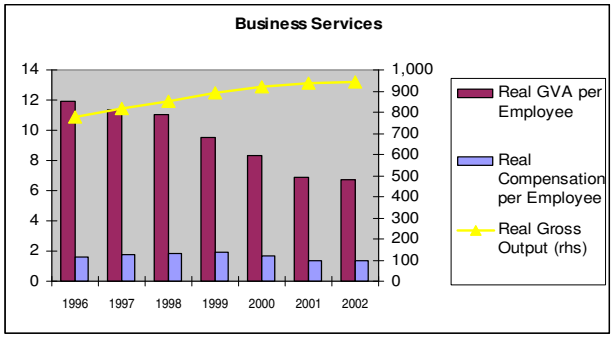
Foreign provision of business services in Jordan is generally limited to some extent. Some sub-sectors such as management consulting and information management are fully liberalized. The professions generally require Jordanian residency and sometimes nationality. For example, real estate agents must be natural Jordanian persons.

**Figure 29 Business Services Subsector Performance**

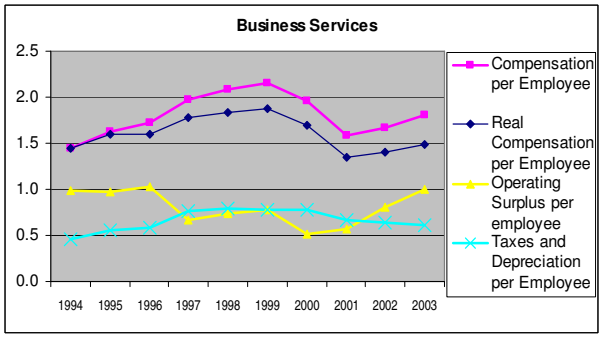
**(a) Annual Change in Output, Profit, Fixed Assets**




**(b) Labor Productivity and Compensation**




**(c ) Factor Returns per Employee**




**Post and Telecommunications**

With the entry of mobile provider Fastlink into the market in 1995, the privatization of Jordan Telecom between 2000 and 2002, and the start-up of a second mobile phone operator, MobileCom in 2000, growth in this sector has been rapid. Real output has grown about 300 percent between 1994 and 2002. Employment has remained fairly constant between 7,000 and 9,000. Therefore, real GVA per employee increased significantly, from 22,000 JD in 1994 to 41,000 in 2002. Average annual worker compensation increased from 2,371 JD in 1994 to 8,364 in 2003. Capital expenditure has been volatile, with a large increase after the establishment of Fastlink in 1996 and lower annual growth each year since 1998. Despite rapidly increasing output, and Jordan Telecom's monopoly over long distance telephony, operating margins have tended to decrease over time – likely due to the competition-oriented regulatory structure of the industry. Perhaps more importantly, the government has maintained a rising level of tax revenue.[65]

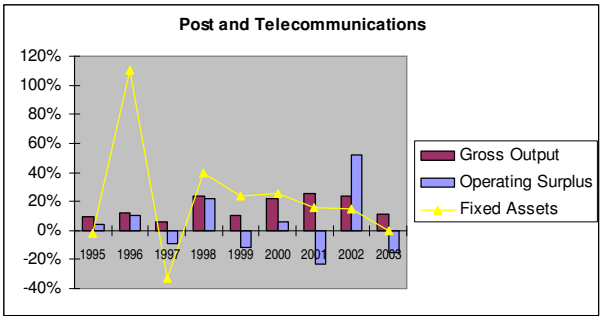
The majority of postal services are restricted to the national postal services. Jordan has signed the Basic Telecommunications Reference Paper as an attachment of its GATS

[65] Fastlink and Mobilcom have entered into revenue sharing agreemtns with the Government.

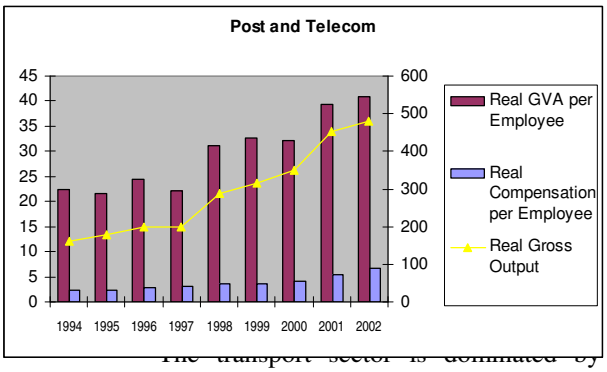
schedule. However, until the beginning of 2005 Jordan Telecom has had a monopoly over most fixed line telecommunication services.

**Figure 30 Post and Telecommunication Subsector Performance**

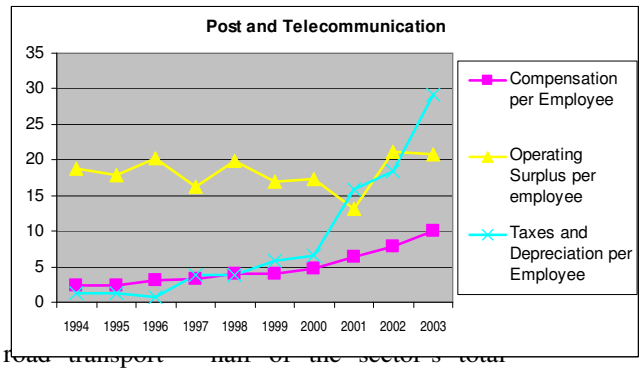
**(a) Annual Change in Output, Profit, Fixed Assets**




**(b) Labor Productivity and Compensation**




**(c ) Factor Returns per Employee**

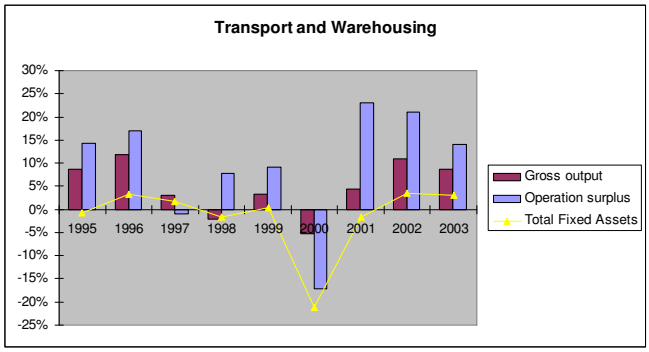



The transport sector is dominated by road transport — half of the sector's total employment and one quarter of its gross output. Total employment grew steadily reaching 100,000 in 1999. Since then employment has been constant. Real output grew very slowly during 1996-2001 causing GVA per employee to decline over this period. Gross output and value added have grown strongly since 2001. However, this gain has been captured in higher operating surpluses, rather than higher average annual compensation or taxes and depreciation. Profits have increased to new highs while average employee compensation fell from 1,948 in 1994 to 1,357 in 1999 and only increased to 1,492 by 2003. Real wages have fallen continuously over the entire period under study. The value of fixed assets has decreased, even in nominal terms. Declining depreciation means firms are not reinvesting in new vehicles.

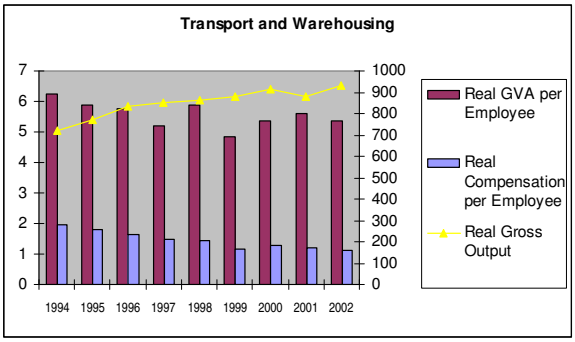
Jordan has made very few commitments under GATS to permitting foreign providers of transport services to operate in Jordan. The few that are made with respect sea transport and auxiliary transport services are subject to nationality and foreign equity limits. Under Jordanian law no foreign equity is permitted in road transport firms at all.

**Figure 31 Transport and Warehousing Subsector Performance**

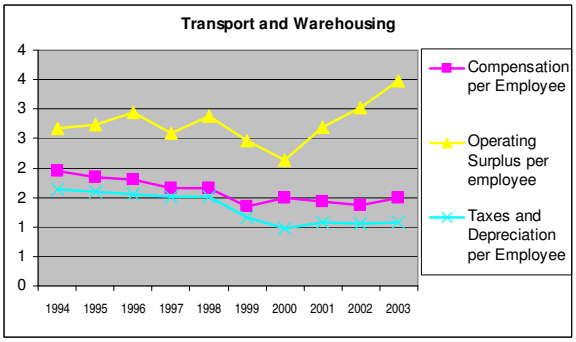
**(a) Annual Change in Output, Profit, Fixed Assets**




**(b) Labor Productivity and Compensation**




**(c ) Factor Returns per Employee**




## Trade

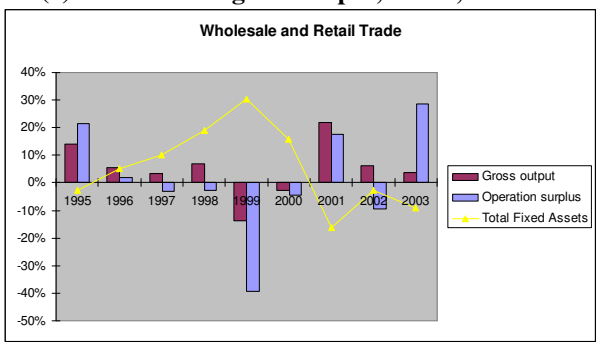
Trading employment remained relatively flat during 1997-2000. Real gross output has grown slowly except for a large fall in 1998. This fall led to a new lower equilibrium real GVA per employee. Operating surplus has steadily declined with a massive -40 percent fall in 1999. Real wages increased slowly peaking in 2000. In 2003 real wages were 8.5 percent higher than in 1994. Increasing real output since 2000 was accompanied by a 15 percent increase in employment in 2001 so real GVA per worker did not increase. However, low real wages meant the long-term downward profitability trend was reversed. Capital expenditure growth peaked in 1999. Rising depreciation and taxes since 2000 have taken their share of profit growth.

As a labor-intensive industry trading output growth has been accompanied by an increase in employment – likely an extensive expansion of firm numbers rather an intensive expansion of firm turnover. Flexible real wages maintain employment levels during periods of recession at the cost of productivity. This reflects the family ownership of small shops. The trading sector is relatively closed to competition from foreign providers. Commission agents must be Jordanian nationals or form companies and be

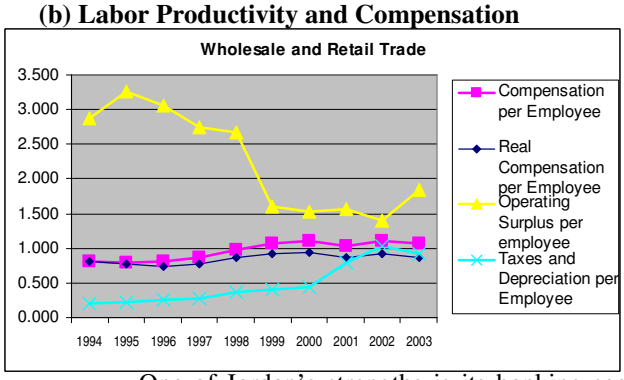
registered in Jordan. All foreign investors in trading activities are subject to 50 percent foreign equity limits.[66]

**Figure 32 Trade Subsector Performance**

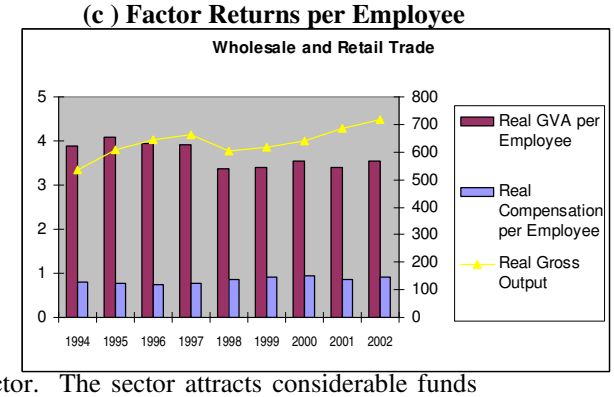
**(a) Annual Change in Output, Profit, Fixed Assets**




**(b) Labor Productivity and Compensation**




**(c ) Factor Returns per Employee**




One of Jordan's strengths is its banking sector. The sector attracts considerable funds from the region. Recent reforms of the securities market have deepened financial intermediation reducing the cost of capital for firms.[67] These reforms have been implemented over the last fifteen years. Although Jordan included commitments on each financial subsector in its GATS Schedule, WTO membership has not prompted these reforms. Jordan placed some restrictions on these commitments – commercial presence is required and real property in Jordan cannot be mortgaged to banks located overseas.

Figures are only available between 1998 and 2003 and may not fully reflect the underlying characteristics of the financial sector. After a bad period for banking in 1998 and 1999, the banking and insurance sectors have enjoyed significant growth in gross output, and particularly in operating surplus. Banking GVA per employee has grown from 8,759 in 1998 to 19,861 2003. While annual average compensation for both

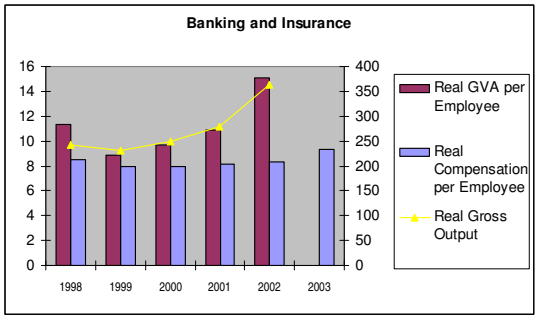
[66] Jordan permitted a Kuwaiti firm to purchase a controlling share of Safeway in Jordan in 2004. Under WTO rules this is a tacit approval of an increase in the foreign equity cap.

[67] See Susan Crean, Rishi Goyal, Mushfiq Mobarak and Randa Sab, *Financial Sector Development in the Middle East and North Africa*, IMF WP/04/201, 2004. Jordan is ranked third in terms of a financial development index score of 6.9 out of 10, compared with Lebanon at 7.0 and Bahrain at 7.7. The regional average was 5.0.

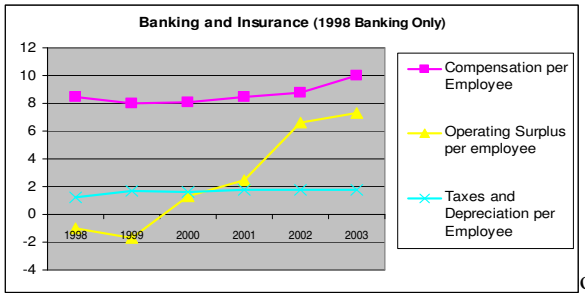
banking and insurance has increased from 8,500 to 10,000, operating surplus per employee increased from a loss of 1,000 to a gain of 7,340. Taxes and depreciation have remained constant over this period. Jordan has a high ratio of foreign bank to domestic bank assets (68 percent in 1998). During this recent period of growth a number of foreign banks established retail banking networks and began providing foreign currency deposits and loans.

**Figure 33 Banking and Insurance Subsector Performance**

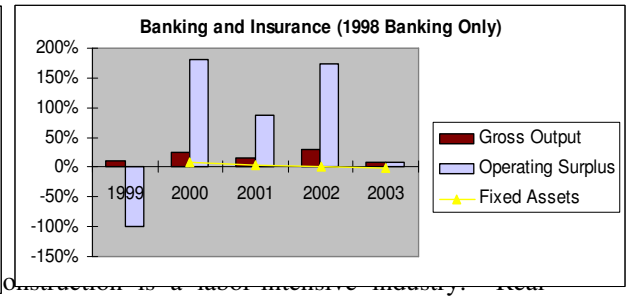
**(a) Annual Change in Output, Profit, Fixed Assets**




**(b) Labor Productivity and Compensation**




**(c ) Factor Returns per Employee**




Construction is a labor intensive industry. Real construction output declined significantly each year between 1994 and 1998, and then increased each year thereafter. Employment steadily increased leading to large falls in GVA per employee in the 1990s. Operating surplus reached its low point of 2 percent of output in 1999. Since 1999, output and profit have rebounded, although operating margins are only two thirds of their 9 percent 1994-5 average.

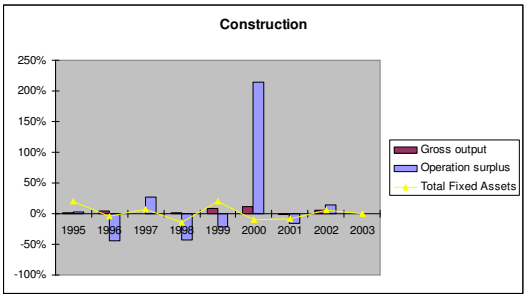
Although, construction employment data is not available between 1999-2003, estimations based on the national unemployment survey indicate that average worker compensation has steadily increased since 1995 – this is unique among all services. The minimum wage introduced in 1999 may have supported payments to entry level construction workers but at 960 JD a year it was well below the average annual compensation of 2,391 JD in 1998. Average annual compensation is currently about 3,000 JD – almost three times higher than the current minimum wage. Rising wages and a flat operating surplus per employee suggest that competition in the industry is bidding up the price of labor while keeping margins down. The availability of foreign laborers should act as a limit on real wage increases. If these employment figures are correct, it is likely that quotas on

employment of foreign workers and increases in foreign worker permits have slowed recruitment of foreign construction workers.

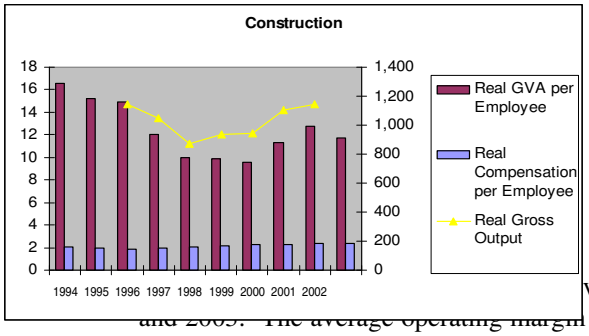
The sector is not very liberalized. Foreign construction firms generally have to form joint ventures with local firms and/or are subject to 50 percent foreign equity limits. Foreign firms also need to possess more experience than Jordanian firms to obtain a certain grading.

**Figure 34 Construction Subsector Performance**

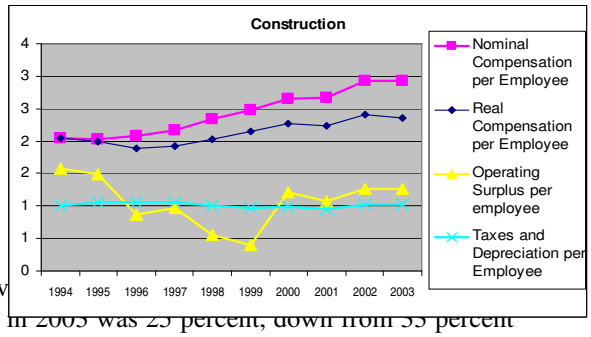
**(a) Annual Change in Output, Profit, Fixed Assets**




**(b) Labor Productivity and Compensation**




**(c ) Factor Returns per Employee**




and 2005. The average operating margin in 2005 was 25 percent, down from 33 percent in 1994. Nominal surveyed GVA per employee was up modestly at 13 percent and fixed assets were up 64 percent.[68] In general, competition has acted to increase output and reduce profits. Moreover, as the earlier discussion suggested, these appear to be new medium term equilibriums, rather than mid-point increases or falls.

This performance is exemplified by the two sectors most open to foreign competition. Output and GVA per employee increased by more than 100 percent in both telecom and banking while banking profit margins fell by 64 percent. Transport and storage is the most protected sector. GVA per employee and fixed assets fell by 3 percent and 15 percent respectively while profitability increased by 45 percent.

### 3.6.3.1 Profitable and Protected Subsectors

The table below lists those individual subsectors with high profit margins that have not improved efficiency significantly. Not surprisingly, transport and retail trade are the most protected service sectors in the country and have restructured the least. Road

[68] Note that real GVA per worker, measured by the DOS GDP data series, declined over the entire ten-year period.

freight transport suffered falling fixed asset values, falling efficiency in terms of GVA per employee and rising profitability. The operating margin increased by 125 percent to 46 percent in 2003, almost twice the services sector average. Passenger land transport is the third largest subsector after telecommunication and building. While GVA per employee did increase by 14 percent, profit margin also increased to 46 percent.

**Table 21 Profitable and Protected Service Subsectors**

| Subsector | 2003 Output (000 JD) | Change in Output | 2003 Profit Margin | Change in Profit Margin | Change in GVA per Employee | |
|---|---|---|---|---|---|---|
| Freight transport by road | 229,929 | 82% | 46% | 125% | -17% | |
| Other scheduled, non-scheduled | 299,106 | 53% | 46% | 9% | 14% | |
| Retail sale of second-hand goods in | 13,458 | 76% | 43% | -19% | -22% | |
| Non-specialized retail trade in stores | 106,111 | -1% | 46% | -21% | -20% | |
| Retail sale of food, beverages, tobacco | 60,268 | 88% | 47% | -26% | -5% | |
| Sale, repair of motor vehicles, retail sale | 148,431 | 40% | 39% | -28% | 13% | |
| Retail trade not in stores | 1,381 | -37% | 50% | -32% | -63% | |
| Other retail trade of new goods in | 208,551 | 11% | 35% | -39% | -25% | |
| Real estate activities with own or leased | 20,013 | 361% | 28% | -43% | -12% | |
| Sea and coastal water transport | 20,586 | -20% | 24% | -16% | -38% | |

Source: Derived from DOS Annual Service Survey 1994-2003.
Note: Percentage change between 1994 and 2003.

Retail trade has enjoyed similar high profits and declining efficiency. All but one retail subsectors enjoyed increased profitability and declining productivity. Specialized and non-specialized retail trade both experienced modest increases in output, high profit margins (35 percent and 46 percent of output respectively) and falling GVA per employee (-25 percent and -20 percent respectively).

**3.6.3.2 Adjusting Firms – Improving Productivity, Low Profitability**

The following table lists those subsectors that experienced falling profit margins resulting in low profit margins in 2003 while increasing GVA per employer between 1994 and 2003. The table includes subsectors competing with the public sector, i.e. health, education services and postal services, and also construction related services.

The two transport subsectors that have being liberalized are on the list, rail and air transport. Local airlines (dominated by Royal Jordanian Airlines) and the two rail operations in the Kingdom have not increased output over the ten years under study. Rail operational surplus declined to -66 percent of output in 2000. Air transport services experienced negative or low profitability during 2001-2003 after the intifada and conflict in Iraq. However, both subsectors have each halved their workforce and halved the value of their total fixed assets increasing productivity by 50 percent.

The national post and courier services have increased output by 48 percent and trimmed their workforce to increase productivity by 38 percent. However, profit is still elusive. A

positive operating margin was achieved only in 1998. The large increase in fixed assets is a 14 million JD increase in 2003.

Private hospitals enjoyed a 300 percent increase in output while managing to just double their workforce. However, profits have continued to fall over the entire ten-year period. The starting operating surplus in 1994 was unusually high, but even taking the 1995 value shows that profitability has dropped 33 percent.

Private education, both primary and secondary, have enjoyed growth of 100 percent or more. In particular, secondary teaching has become 30 percent more efficient in terms of labor productivity. Both subsectors experienced a slump in profitability in the period 1999-2001, but have managed to recover the levels of 1994 and 1995.

Finally the construction sector has enjoyed significant output growth yet profitability has declined while productivity has increased modestly. As discussed above, employment and average compensation have been sustained at the expense of operating profits. The resulting operating margins of between 5 percent-10 percent of output may be appropriate for such an industry. Mention should be made of the hotel industry which has been suffering steadily declining profits over the entire ten-year period. Although, exacerbated recently by regional conflict, increasing new hotel development has led to rising employment numbers and has bid up average compensation. However, modest output growth has meant falling GVA per employee and record profit losses in 2003. Minimum staff numbers per hotel restrict the ability of this industry to improve labor productivity.

**Table 22 Adjusting Service Subsectors**

| | 2003 Output (000 JD) | Change Output | 2003 Profitability | | |
|---|---|---|---|---|---|
| Labour recruitment and provision of personnel | 291 | 2347% | -8% | | |
| Motion picture and video production and distribution | 12,643 | 635% | -1% | | |
| Advertising | 14,910 | 205% | 12% | | |
| Veterinary activities | 206 | 187% | 14% | | |
| Other recreational activities | 7,563 | 272% | 13% | | |
| Transport via railways | 8,031 | 4% | -2% | | |
| Scheduled and non-scheduled air transport | 276,159 | -4% | 3% | | |
| Hospital activities | 104,695 | 295% | 2% | | |
| National post activities | 9,963 | 43% | -28% | | |
| Building-cleaning activities | 10,389 | 205% | -3% | | |
| General secondary education | 56,409 | 143% | 9% | | |
| Other human health activities | 7,106 | 189% | 16% | | |
| Other entertainment activities n.e.c. | 6,018 | 71% | 7% | | |
| Activities of travel agencies and tour operators | 45,618 | 428% | 8% | | |
| Primary education | 30,160 | 95% | 11% | | |

| | | | | | |
|---|---|---|---|---|---|
| Building installation | 134,886 | 454% | 9% | | |
| Building complete constructions, parts; civil engineering | 311,258 | 2% | 5% | | |
| Hotels; camping sites, other short-stay accommodation | 113,776 | 69% | -10% | | |

Source: Derived from DOS Annual Service Survey 1994-2003.
Note: Percentage change between 1994 and 2003.

#### 3.6.3.3 Successful Subsectors – Profitable and Productive

Table 23 lists subsectors that have improved both profitability and productivity over the ten-year period. Some of the improvement is due to regulatory liberalization, e.g. in higher education and warehousing. Servicing booming sectors is a more likely reason for their success. Many of these subsectors benefit from the rising volume of international trade. For example, the activities of other transport agencies include freight forwarders and customs brokers, renting of land transport equipment, storage and warehousing. Output has grown in response to the increasing volume of international trade. Architectural and engineering services and the renting of construction machinery and has benefited from the housing boom.

**Table 23 Service Subsectors Experiencing Improved Profitability and Productivity**

| | 2003 Output (000 JD) | Change Output | 2003 Profitability | Change Profitability | Chang GVA Emplo | |
|---|---|---|---|---|---|---|
| Renting of construction, civil engineering machinery | 1,458 | 601% | 74% | 153% | 370% | |
| Storage and warehousing | 18,541 | 354% | 46% | 1107% | 255% | |
| Activities of other transport agencies | 183,434 | 2269% | 49% | 44% | 186% | |
| Renting of land transport equipment | 9,219 | 148% | 23% | 31% | 175% | |
| Market research and public opinion polling | 226 | 348% | 19% | 140% | 166% | |
| Other service activities n.e.c. | 337 | 831% | 22% | 73% | 108% | |
| Higher education | 95,061 | 302% | 29% | 15% | 90% | |
| Cargo/passenger handling/brokerage services and facilities | 191,529 | 190% | 47% | 42% | 86% | |
| Architectural, engineering activities, related consultancy | 34,646 | 105% | 26% | 29% | 80% | |
| Business and management consultancy activities | 5,676 | 336% | 31% | 37% | 59% | |
| Restaurants, bars and canteens | 125,369 | 48% | 21% | 13% | 58% | |

Source: Derived from DOS Annual Service Survey 1994-2003.
Note: Percentage change between 1994 and 2003.

**Table 24 Change in Key Performance Indicators of Service Subsectors 1994 and 2003**

| | 2003 Output (000 JD) | Change Output | 2( P M | | |
|---|---|---|---|---|---|
| Building Completion | 816 | -32% | -9 | | |
| Retail trade not in stores | 1,381 | -37% | 5( | | |
| Sea and coastal water transport | 20,586 | -20% | 2 | | |
| Other retail trade of new goods in specialized stores | 208,551 | 11% | 3 | | |
| Retail sale of second-hand goods in stores | 13,458 | 76% | 4 | | |
| Non-specialized retail trade in stores | 106,111 | -1% | 4( | | |
| Freight transport by road | 229,929 | 82% | 4( | | |
| Investigation and security activities | 5,742 | 642% | 9 | | |
| Real estate activities with own or leased property | 20,013 | 361% | 2 | | |
| Motion picture projection | 12,493 | 574% | -2 | | |
| Retail sale of food, beverages and tobacco in specialized stores | 60,268 | 88% | 4 | | |
| Hotels; camping sites, other short-stay accommodation | 113,776 | 69% | -1 | | |
| Dramatic arts, music and other art activities | 828 | 49% | 0 | | |
| Site Preparation | 4,978 | 64% | 2 | | |
| Building complete constructions or parts thereof; civil engineering | 311,258 | 2% | 5 | | |
| Primary education | 30,160 | 95% | 1 | | |
| Building installation | 134,886 | 454% | 9 | | |
| Wholesale, commission trade, except of motor vehicles | 254,744 | 199% | 2 | | |
| Sale, repair of motor vehicles, retail sale of automotive fuel | 148,431 | 40% | 3 | | |
| Other scheduled and non-scheduled passenger land transport | 299,106 | 53% | 4( | | |
| Photographic activities | 5,753 | 9% | 2 | | |
| Renting of private and household goods n.e.c. | 3,375 | 42% | 4 | | |
| Washing and (dry-) cleaning of textile and fur products | 6,162 | 50% | 3 | | |
| Activities of travel agencies and tour operators | 45,618 | 428% | 8 | | |
| Renting of other machinery and equipment n.e.c. | 280 | 264% | 2 | | |
| Other entertainment activities n.e.c. | 6,018 | 71% | 7 | | |
| Repair of personal and household goods | 11,521 | 46% | 5 | | |
| Other human health activities | 7,106 | 189% | 1( | | |
| General secondary education | 56,409 | 143% | 9 | | |
| Legal activities | 16,229 | 122% | 5 | | |
| Medical and dental practice activities | 31,976 | 44% | 4 | | |
| Building-cleaning activities | 10,389 | 205% | -3 | | |
| National post activities | 9,963 | 43% | -2 | | |
| Hospital activities | 104,695 | 295% | 2 | | |
| Insurance | 48,529 | 54% | 2 | | |
| Hairdressing and other beauty treatment | 25,556 | 55% | 4 | | |
| Maintenance and repair of office and computing machinery | 1,041 | 161% | 4 | | |
| Real estate activities on a fee or contract basis | 4,775 | 47% | 4 | | |
| Scheduled and non-scheduled air transport | 276,159 | -4% | 3 | | |
| Adult and other education | 11,163 | 83% | 2( | | |
| Transport via railways | 8,031 | 4% | -2 | | |
| Other business activities n.e.c. | 11,805 | 591% | 3 | | |
| Other recreational activities | 7,563 | 272% | 1 | | |
| Restaurants, bars and canteens | 125,369 | 48% | 2 | | |
| Business and management consultancy activities | 5,676 | 336% | 3 | | |
| Veterinary activities | 206 | 187% | 1 | | |
| Advertising | 14,910 | 205% | 1 | | |
| Software consultancy and supply | 17,699 | 1447% | 2 | | |
| Architectural, engineering activities, related technical consultancy | 34,646 | 105% | 2( | | |
| Cargo/passenger handling/brokerage services and facilities | 191,529 | 190% | 4 | | |
| Higher education | 95,061 | 302% | 2 | | |
| Accounting, book-keeping and auditing activities; tax consultancy | 8,576 | 128% | 2 | | |

| | | | | | |
|---|---|---|---|---|---|
| Other service activities n.e.c. | 337 | 831% | 2 | | |
| Telecom | 599.166 | 212% | 2 | | |
| Market research and public opinion polling | 226 | 348% | 1 | | |
| Renting of land transport equipment | 9.219 | 148% | 2 | | |
| Motion picture and video production and distribution | 12.643 | 635% | -1 | | |
| Storage and warehousing | 18.541 | 354% | 4 | | |
| Labor recruitment and provision of personnel | 291 | 2347% | -8 | | |
| Renting of construction, civil engineering machinery | 1.458 | 601% | 7 | | |
| Other computer related activities | 74 | -77% | -1 | | |
| Research and development on natural sciences and engineering | 1.809 | 38% | -1 | | |
| Funeral and related activities | 60 | -35% | 1 | | |
| | | | | | |
| Telecom | 599.166 | 212% | 2 | | |
| Total: Transport and Storage | 1.089.497 | 51% | 3 | | |
| Total: Wholesale and retail trade | 804.465 | 51% | 3 | | |
| Total Construction - Contractors | 451.938 | 37% | 6 | | |
| Total: Hotels, Professions and Other Profit-oriented Services | 821.563.6 | 127% | 1 | | |
| Total: Banks and financial institutions | 378.758 | 95% | 3 | | |
| Total: All Profit Services 1998-2003 | 4.203.881 | 44% | 2 | | |
| Total All Profit Services excluding Telecom, Insurance | 3.776.594 | 82% | 2 | | |

Source: Derived from DOS Annual Service Survey 1994-2003.

Notes: Percentage change between 1994 and 2003. For telecom 1998-2003; Insurance 1999-2003; All Construction Subsectors 1994-2002; Other Computer Related Activities, Funeral and Related Activities, Research and Development on Natural Sciences and Engineering 1999-2003; Storage and Warehousing operating surplus, 1995.

**Table 25 Comparing Key Service Subsector Performance Indicators with Trade Restrictiveness**

| | Change Output | Change Profit | Chang GVA | | |
|---|---|---|---|---|---|
| Building Completion | -32% | -251% | -67% | | |
| Retail trade not in stores | -37% | -32% | -63% | | |
| Sea and coastal water transport | -20% | -16% | -38% | | |
| Other retail trade of new goods in specialized stores | 11% | -39% | -25% | | |
| Retail sale of second-hand goods in stores | 76% | -19% | -22% | | |
| Non-specialized retail trade in stores | -1% | -21% | -20% | | |
| Freight transport by road | 82% | 125% | -17% | | |
| Investigation and security activities | 642% | -11% | -15% | | |
| Real estate activities with own or leased property | 361% | -43% | -12% | | |
| Motion picture projection | 574% | -259% | -8% | | |
| Retail sale of food, beverages and tobacco in specialized stores | 88% | -26% | -5% | | |
| Hotels; camping sites, other short-stay accommodation | 69% | -143% | -4% | | |
| Dramatic arts, music and other art activities | 49% | -101% | -2% | | |
| Site Preparation | 64% | -31% | 0% | | |
| Building complete constructions or parts thereof; civil engineering | 2% | -38% | 5% | | |
| Primary education | 95% | -14% | 11% | | |

| | | | | | |
|---|---|---|---|---|---|
| Building installation | 454% | -46% | 11% | | |
| Wholesale, commission trade, except of motor vehicles | 199% | -58% | 12% | | |
| Sale, repair of motor vehicles, retail sale of automotive fuel | 40% | -28% | 13% | | |
| Other scheduled and non-scheduled passenger land transport | 53% | 9% | 14% | | |
| Photographic activities | 9% | 28% | 14% | | |
| Renting of private and household goods n.e.c. | 42% | 55% | 16% | | |
| Washing and (dry-) cleaning of textile and fur products | 50% | 31% | 18% | | |
| Activities of travel agencies and tour operators | 428% | -77% | 19% | | |
| Renting of other machinery and equipment n.e.c. | 264% | 54% | 22% | | |
| Other entertainment activities n.e.c. | 71% | -67% | 24% | | |
| Repair of personal and household goods | 46% | 25% | 27% | | |
| Other human health activities | 189% | -14% | 30% | | |
| General secondary education | 143% | -7% | 31% | | |
| Legal activities | 122% | 20% | 31% | | |
| Medical and dental practice activities | 44% | 21% | 35% | | |
| Building-cleaning activities | 205% | -121% | 36% | | |
| National post activities | 43% | -2% | 38% | | |
| Hospital activities | 295% | -85% | 40% | | |
| Insurance | 54% | 85% | 40% | | |
| Hairdressing and other beauty treatment | 55% | 22% | 42% | | |
| Maintenance and repair of office and computing machinery | 161% | 58% | 43% | | |
| Real estate activities on a fee or contract basis | 47% | 10% | 45% | | |
| Scheduled and non-scheduled air transport | -4% | -59% | 47% | | |
| Adult and other education | 83% | 41% | 47% | | |
| Transport via railways | 4% | -80% | 48% | | |
| Other business activities n.e.c. | 591% | -7% | 48% | | |
| Other recreational activities | 272% | -15% | 50% | | |
| Restaurants, bars and canteens | 48% | 13% | 58% | | |
| Business and management consultancy activities | 336% | 37% | 59% | | |
| Veterinary activities | 187% | -46% | 61% | | |
| Advertising | 205% | -51% | 64% | | |
| Software consultancy and supply | 1447% | -36% | 79% | | |
| Architectural, engineering activities, related technical consultancy | 105% | 29% | 80% | | |
| Cargo/passenger handling/brokerage services and facilities | 190% | 42% | 86% | | |
| Higher education | 302% | 15% | 90% | | |
| Accounting, book-keeping and auditing activities; tax consultancy | 128% | -2% | 91% | | |
| Other service activities n.e.c. | 831% | 73% | 108% | | |
| Telecom | 212% | -67% | 110% | | |
| Market research and public opinion polling | 348% | 140% | 166% | | |
| Renting of land transport equipment | 148% | 31% | 175% | | |
| Motion picture and video production and distribution | 635% | -86% | 247% | | |
| Storage and warehousing | 354% | 123% | 255% | | |
| Labor recruitment and provision of personnel | 2347% | -196% | 297% | | |
| Renting of construction, civil engineering machinery | 601% | 153% | 370% | | |
| Other computer related activities | -77% | -65% | - | | |
| Research and development on natural sciences and engineering | 38% | -76% | - | | |
| Funeral and related activities | -35% | -300% | - | | |

Source: Derived from DOS Annual Service Survey 1994-2003.

Notes: Percentage Change between 1994 and 2003. For telecom, 1998-2003; insurance, 1999-2003; all construction subsectors, 1994-2002; other computer related activities, funeral and related activities, research and development on natural sciences and engineering, 1999-2003; storage and warehousing operating surplus, 1995. The law appears to provide more liberal

treatment than Jordan's WTO GATS Schedule for this subsector. * Before the Regulating Non-Jordanian Investments Regulation No. 54 2000, unstated government policy was to impose 50 percent foreign equity ceiling on all sectors except, hotels, hospitals, agriculture, industry and maritime and rail transport (IBLAW, 1998, p16).

## Annex 1 WTO Accession Tariff Reductions

The following table sets out the simple average tariff for each chapter of the Harmonized System[69] before and at the time of WTO accession (March 2000 and April 2000). The simple average bound tariffs are also listed for March 2005 (half way through the accession program) and March 2010 (completion of accession tariff reductions).

| HS PRIVATE | Chapter Description | Applied (March 2000) | Binding Upon Accession | Binding March 2005 | Bindi Marc 2010 |
|---|---|---|---|---|---|
| 1 | Live animals. | 5.0% | 5.0% | 5.0% | 5.0% |
| 2 | Meat and edible meat offal. | 18.3% | 15.8% | 14.2% | 14.2% |
| 3 | Fish and crustaceans, molluscs and other aquatic invertebrates. | 24.0% | 22.7% | 21.4% | 20.1% |
| 4 | Dairy produce; birds eggs; natural honey; edible products of animal origin, not elsewhere specified or included. | 20.6% | 16.6% | 16.3% | 14.9% |
| 5 | Products of animal origin; not elsewhere specified or included. | 14.5% | 13.6% | 13.6% | 13.6% |
| 6 | Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage. | 20.5% | 19.5% | 18.4% | 18.4% |
| 7 | Edible vegetables and certain roots and tubers. | 23.3% | 23.1% | 22.7% | 21.9% |
| 8 | Edible fruit and nuts; peel of citrus fruit or melons. | 28.4% | 26.6% | 25.6% | 25.2% |
| 9 | Coffee, tea, mate, and spices. | 27.8% | 26.6% | 25.8% | 25.8% |
| 10 | Cereals. | 6.3% | 7.7% | 6.3% | 6.3% |
| 11 | Products of the milling industry; malt; starches; inulin; wheat gluten. | 13.6% | 13.5% | 13.4% | 13.2% |
| 12 | Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medical plants; straw and fodder. | 15.8% | 15.7% | 15.3% | 15.1% |
| 13 | Lac; gums, resins and other vegetable saps and extracts. | 21.7% | 21.7% | 21.7% | 21.7% |
| 14 | Vegetable plaiting materials; vegetable products not elsewhere specified or included. | 10.4% | 10.0% | 10.0% | 10.0% |
| 15 | Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes. | 21.9% | 18.7% | 18.4% | 18.0% |
| 16 | Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates. | 30.4% | 27.3% | 23.1% | 23.1% |
| 17 | Sugars and sugar confectionery. | 23.8% | 20.2% | 18.3% | 18.3% |
| 18 | Cocoa and cocoa preparations. | 24.6% | 19.6% | 17.5% | 17.5% |

[69] Farhat Farhat, "Comparative Assessment of Jordan's Accession to the WTO," January 20, 2000, pp 21 – 24.

| HS PRIVATE | Chapter Description | Applied (March 2000) | Binding Upon Accession | Binding March 2005 | Bindi Marc 2010 |
|---|---|---|---|---|---|
| 19 | Preparations of cereals, flour, starch of milk; pastrycooks' products | 28.2% | 23.4% | 21.6% | 21.6% |
| 20 | Preparations of vegetables, fruit, nuts, or other parts of plants | 30.8% | 24.5% | 21.4% | 21.4% |
| 21 | Miscellaneous edible preparations. | 28.8% | 22.7% | 20.2% | 20.2% |
| 22 | Beverages, spirits and vinegar. | 124.7 | 144.7 | 123.3 | 122.6 |
| 23 | Residues and waste from the food industries; prepared animal fodder. | 7.5% | 6.6% | 6.3% | 6.3% |
| 24 | Tobacco and manufactured tobacco substitutes. | 65.8% | 119 % | 65.8% | 65.8% |
| 25 | Salt; sulphur; earth and stone; plastering materials, lime and cement. | 20.8% | 21.1% | 19.2% | 19.2% |
| 26 | Ores, slag and ash. | 5.0% | 8.3% | 5.0% | 5.0% |
| 27 | Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes. | 16.2% | 18.2% | 14.9% | 14.0% |
| 28 | Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metal, of radioactive elements or of isotopes. | 7.5% | 7.4% | 5.2% | 5.1% |
| 29 | Organic chemicals. | 7.0% | 6.7% | 4.8% | 4.8% |
| 30 | Pharmaceutical products. | 10.0% | 10.0% | 2.6% | 0.2% |
| 31 | Fertilizers. | 8.4% | 8.4% | 8.4% | 8.4% |
| 32 | Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other coloring matter; paints and varnishes; putty and other mastics; inks. | 17.4% | 16.9% | 8.8% | 7.6% |
| 33 | Essential oils and resinoids; perfumery, cosmetics or toilet preparations | 25.6% | 23.3% | 10.3% | 9.4% |
| 34 | Soap, organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations, candles and similar articles, modelling pastes, 'dental waxes" and dental preparations with a basis of plaster. | 25.5% | 23.0% | 7.9% | 7.0% |
| 35 | Albuminoidal substances, modified starches; glues; enzymes. | 19.5% | 18.0% | 14.5% | 13.5% |
| 36 | Explosives; pyrotechnic products;; matches; pyrophoric alloys; certain combustible preparations. | 26.1% | 23.3% | 6.9% | 6.5% |
| 37 | Photographic or cinematographic goods. | 28.2% | 25.2% | 7.1% | 6.4% |
| 38 | Miscellaneous chemical products. | 17.9% | 17.7% | 8.8% | 7.2% |
| 39 | Plastic and articles thereof. | 17.5% | 16.3% | 6.7% | 5.7% |
| 40 | Rubber and articles thereof | 21.4% | 21.9% | 18.5% | 17.5% |

| HS PRIVATE | Chapter Description | Applied (March 2000) | Binding Upon Accession | Binding March 2005 | Bindi Marc 2010 |
|---|---|---|---|---|---|
| 41 | Raw hides and skins (other than furskins) and leather. | 30.0% | 30.0% | 28.3% | 26.7% |
| 42 | Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut) | 30.0% | 30.0% | 19.7% | 19.4% |
| 43 | Furskins and artificial fur; manufactures thereof. | 22.5% | 20.0% | 19.7% | 19.4% |
| 44 | Wood and articles of wood charcoal. | 22.5% | 22.8% | 20.1% | 18.6% |
| 45 | Cork and articles of cork. | 15.4% | 17.9% | 14.6% | 14.6% |
| 46 | Manufactures of straw, of esparto or of other plaiting materials; basketware and wickerwork. | 21.0% | 21.0% | 18.5% | 18.5% |
| 47 | Pulp of wood or other fibrous cellulosic material; recovered (waste and scrap) paper or paperboard | 5.0% | 9.0% | 5.0% | 5.0% |
| 48 | Paper and paperboard; articles of paper pulp; of paper or of paperboard | 23.4% | 23.6% | 21.2% | 20.5% |
| 49 | Printed books, newspapers, pictures and other products of the printing industry; manuscripts and plans. | 15.2% | 16.8% | 13.6% | 14.3% |
| 50 | Silk. | 14.0% | 14.0% | 12.5% | 11.0% |
| 51 | Wool, fine or coarse animal hair; horsehair yarn and woven fabric. | 13.4% | 13.4% | 12.0% | 10.5% |
| 52 | Cotton. | 20.0% | 20.0% | 17.1% | 13.5% |
| 53 | Other vegetable textile fibers; paper yarn and woven fabrics of paper. | 11.8% | 11.8% | 10.8% | 9.7% |
| 54 | Man-made filaments. | 18.1% | 18.1% | 15.7% | 13.3% |
| 55 | Man-made staple fibers. | 20.3% | 20.3% | 17.4% | 14.5% |
| 56 | Wadding, felt and nonwovens; special yarn; twine, cordage ropes and cables and articles thereof. | 23.6% | 21.8% | 18.5% | 15.3% |
| 57 | Carpets and other textile floor covering. | 30.0% | 30.0% | 25.0% | 20.0% |
| 58 | Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery. | 29.0% | 26.9% | 22.6% | 18.2% |
| 59 | Impregnated coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use. | 22.4% | 21.0% | 17.9% | 14.7% |
| 60 | Knitted or crocheted fabrics. | 30.0% | 30.0% | 25.0% | 16.9% |
| 61 | Articles of apparel and clothing accessories, knitted or crocheted. | 28.3% | 28.3% | 23.7% | 19.1% |
| 62 | Articles of apparel and clothing accessories, not knitted or crochet. | 29.2% | 29.2% | 24.3% | 19.5% |
| 63 | Other made up textile articles; sets; worn | 29.5% | 29.5% | 24.7% | 19.2% |

| HS PRIVATE | Chapter Description | Applied (March 2000) | Binding Upon Accession | Binding March 2005 | Bindi Marc 2010 |
|---|---|---|---|---|---|
| | clothing and worn textile articles; rags. | | | | |
| 64 | Footwear, gaiters and the like; parts of such articles | 30.0% | 30.0% | 29.4% | 28.8% |
| 65 | Headgear and parts thereof. | 30.0% | 30.0% | 30.0% | 30.0% |
| 66 | Umbrellas and sun umbrellas, walking-sticks, seat-sticks, whips, riding-crops and parts thereof. | 30.0% | 30.0% | 30.0% | 30.0% |
| 67 | Prepared feathers and down and articles made of feathers or down; artificial flowers; articles of human hair. | 30.0% | 30.0% | 30.0% | 30.0% |
| 68 | Article of stone, plaster, cement, asbestos, mica or similar materials. | 27.5% | 27.5% | 26.6% | 26.4% |
| 69 | Ceramic products. | 25.3% | 25.3% | 23.0% | 22.5% |
| 70 | Glass and glassware. | 24.8% | 24.1% | 21.5% | 20.5% |
| 71 | Natural or cultured pearls, precious or semi-precious stones, precious metal, metal clad with precious metal and articles thereof; imitation jewellery; coins. | 17.6% | 17.9% | 16.0% | 15.9% |
| 72 | Iron and steel. | 16.6% | 19.8% | 15.1% | 13.7% |
| 73 | Articles of iron or steel. | 27.3% | 27.0% | 24.4% | 23.9% |
| 74 | Copper and articles thereof. | 19.9% | 20.7% | 18.2% | 17.4% |
| 75 | Nickel and articles thereof. | 23.3% | 22.6% | 22.1% | 22.1% |
| 76 | Aluminium and articles thereof. | 20.2% | 20.7% | 18.6% | 18.5% |
| 78 | Lead and articles thereof. | 18.0% | 19.7% | 16.7% | 15.7% |
| 79 | Zinc and articles thereof. | 16.0% | 17.3% | 15.3% | 15.3% |
| 80 | Tin and articles thereof. | 15.8% | 18.8% | 15.4% | 15.4% |
| 81 | Other base metals; cermets; articles thereof. | 9.0% | 13.5% | 8.9% | 8.9% |
| 82 | Tools, implements, cutlery, spoons and forks, of base metal, parts thereof of base metal. | 18.6% | 19.8% | 16.8% | 16.7% |
| 83 | Miscellaneous articles of base metal. | 29.6% | 26.8% | 25.8% | 25.7% |
| 84 | Nuclear reactors, boilers, machinery and mechanical appliance; part thereof. | 9.9% | 11.7% | 8.3% | 7.9% |
| 85 | Electrical machinery and equipments and parts thereof; sound recorder and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles. | 22.4% | 21.0% | 14.7% | 14.1% |
| 86 | Railway or tramway locomotive rolling-stock and parts thereof; railway or tramway track fixtures and fittings and parts thereof; mechanical (including electro-mechanical) traffic signalling equipment of all kinds. | 3.3% | 8.3% | 3.3% | 3.3% |

| HS PRIVATE | Chapter Description | Applied (March 2000) | Binding Upon Accession | Binding March 2005 | Bindi Marc 2010 |
|---|---|---|---|---|---|
| 87 | Vehicles other than railway or tarmway rolling-stock and parts accessories thereof. | 21.1% | 20.8% | 18.4% | 17.6% |
| 88 | Aircraft, spacecraft, and parts thereof. | 5.7% | 7.7% | 5.7% | 5.7% |
| 89 | Ships, boats floating structures. | 2.9% | 6.8% | 2.9% | 2.9% |
| 90 | Optical photographic and cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof. | 18.1% | 18.2% | 11.6% | 10.5% |
| 91 | Clocks and watches and parts thereof. | 23.6% | 24.3% | 21.1% | 20.3% |
| 92 | Musical instruments; parts and accessories of such articles. | 30.0% | 30.0% | 30.0% | 30.0% |
| 93 | Arms and ammunition; parts and accessories thereof. | 29.3% | 26.2% | 25.2% | 25.2% |
| 94 | Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified or included; illuminated nameplate and the like; prefabricated buildings. | 31.6% | 27.3% | 27.2% | 26.6% |
| 95 | Toys, games and sport requisites; parts and accessories. | 30.0% | 30.0% | 30.0% | 30.0% |
| 96 | Miscellaneous manufactures articles. | 26.2% | 25.2% | 24.0% | 24.0% |
| 97 | Works of art, collectors' pieces and antiques. | 27.5% | 28.1% | 27.5% | 26.3% |
| | TOTAL | 17.7% | 19.6% | 16.6% | 16.3% |

## Annex 2 EU Exports to Jordan Restricted under Association Agreement[70]

Examples of agricultural products restricted under Protocol Two are:

- § Peaches, prepared or preserved
- § Barley
- § Preserved Olives
- § Butter
- § Processed Cheese and dairy spreads
- § Semi/wholly milled rice
- § Fresh and Frozen meat (with and without bones)
- § Animal Feed (other than that used for cats and dogs)
- § Live Animals

Goods and Products Containing an Agricultural Component that have been Excluded from Tariff Reductions Allowed by Association Agreement, and are Listed in Annex I to the Treaty Establishing the European Community (1957):

1. Agricultural products: meaning the products of the soil, of stock farming and of fisheries and products of first-stage processing directly related to these products
2. Live animals, meat and edible meat offal, guts, bladders and stomachs of animals (other than fish), whole and pieces thereof
3. Fish, crustaceans and molluscs
4. Dairy produce; birds' eggs; natural honey
5. Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage
6. Coffee, tea and spices, excluding mate
7. Cereals and products of the milling industry; malt and starches; gluten; inulin
8. Some oil and lard types made from animals, vegetables and fish. Margarine, imitation lard and other prepared edible fats
9. Beet sugar and cane sugar, solids, and other sugars; sugar syrups; artificial honey (whether or not mixed with natural honey); caramel; molasses, whether or not decolourised, and flavoured or coloured sugars, syrups and molasses, but not including fruit juices containing added sugar in any proportion
10. Cocoa beans, whole or broken, raw or roasted, shells, husks, skins and waste.
11. Grape must, in fermentation or with fermentation arrested otherwise than by the addition of alcohol. Wine of fresh grapes; grape must with fermentation arrested by the addition of alcohol and other fermented beverages (for example, cider, perry and mead)
12. Ethyl alcohol or neutral spirits, whether or not denatured, of any strength
13. Vinegar and substitutes for vinegar
14. Un-manufactured tobacco, tobacco refuse
15. Natural cork, un-worked, crushed, granulated or ground; waste cork.
16. Flax, and True hemp raw or processed but not spun; flax and hemp tow and waste (including pulled or garnetted rags)

[70] Tables are copied from "The Jordan-EU Association Agreement, Trade Liberalisation in Goods", www.eucc.org, 2003,

Sensitive industrial product imports are restricted in Annexes II, IIIA and IIIB and IV.

Annex II: Lists of Industrial Products originating in the EU on which Jordan may retain an Agricultural Component. These are subject to a phased annual 10% reduction of the tariff until the maximum tariff reduction of 50% is reached, between 2006 and 2010.

- Milk and milk products, sweetened or not, with and without cocoa
- Ice cream
- Butter, oils and fats
- Corn, maize and sweet potatoes (fresh and preserved)
- Confectionaries, chocolates and cocoa products
- Pasta (with the exception of cooked or stuffed forms)
- Yeast, bread and other bakery items
- Chemicals and chemical products used for dying, tinting, adhesives and stabilisers
- Cocoa paste (with or without natural oils and fats)
- Ethylene and alcoholic drinks and liquors
- Non-alcoholic beverages not containing fruit or vegetable juices
- Glycerine in all forms

Annex III – Table A
Annual tariff reductions of 20% starting 1 May 2002 until Total Duty and Quota Free Access is achieved on 1 May 2006

- Medical instruments and appliances
- Some mining products
- Pharmaceuticals
- Fertilisers
- Jewellery and precious metals
- Industrial raw materials used as manufacturing inputs such as some chemicals, plastics and rubber
- Leather products
- Processed foods and some animal and vegetable products
- Some types of wood, pulp, cork, paper and packaging products used in the printing and packaging industry
- Some types of textiles, clothes and garments products

Annex III – Table B
Annual tariff reductions of 10% starting on 1 May 2006 until total duty and quota free access achieved on 1 May 2014.

- Some medical and optical appliances, clocks, watches and musical instruments
- Some mining products
- Some chemical products and related industries including plastics and rubber
- Artificial flowers
- Electrical and mechanical appliances, spare parts, and different transportation vehicles

- Some types of furniture, sports equipment, and different arts pieces
- Some types of processed foods, fats, oils, non-alcoholic beverages, tobacco and cigarettes
- Some types of wood, pulp, cork, paper and packaging products used in the printing and packaging industry
- Most types of textiles, clothes, shoes, handbags

Annex IV
Lists of Industrial Products Originating in the EU that do not undergo any tariff reductions for the first four years after the date of entry into force of the Agreement. Both Parties have agreed to reexamine this list and establish a tariff-dismantling schedule for these products.

Some examples are:

- Coffee and tea concentrates and related products
- Food preparations, sauces, spices and processed mustard
- Carpets, rugs and blankets
- Alcoholic beverages
- Some types of ready wear, clothes and shoes
- Used vehicles
- Some types of furniture, lamps and electrical lights
- Pre-fabricated houses

## Annex 3 General Staging Categories for US and Jordanian Exports

| Category | Tariff Elimination Rule | Example of Products Affected |
|---|---|---|
| A | Over two years in equal annual stages with duty free status in 2002 | Onions; candied nuts; cauliflower and bro garments, not knitted or crocheted, etc. |
| B | Over 4 years in equal annual stages, with duty free status in 2004 | Safety glad; cellulose and its chemical deriv nylon yarn; men's and boys' vests; ceramic sinks, |
| C | Over 5 years in equal annual stages, with duty free status in 2005 | Electric blankets; men's and boys' suits; sheep bread; wrapping paper; synthetic filament yarn; c fabrics; footwear; buckets and shovels; axles, etc. |
| D | Over 10 years in equal annual stages, with duty free status in 2010 | Many fresh, dried, and processed fruits and vege many spices, pasta, couscous, salt, certain monu or building stones, certain varnishes, perfume, up, certain personal hygiene products, c photographic materials, certain woven fabrics, c textiles and other fabrics, etc. |
| E | FTA = WTO | Milk substance for infants; maize, rice, wheat, or cereal flours; animal hides; waferboard; cotton; w fine animal hair carpets, etc. |

Special Staging Categories: US Exports to Jordan

| Category | Tariff Elimination Rule | Products Affected |
|---|---|---|
| I | Over 8 years in annual stages | Various prepared products |
| J/K | Negligible or no change for the first 5 years followed by annual reductions until duty free by 2010 | Apples and chicken |
| L | No change for first 3 years followed by 5% reduction in year 4, 10% reduction in years 5 and 6. Thereafter, equal annual reductions until duty is 44.5% of base rate in 2010. | Alcoholic beverages |
| M | No change for the first 4 years followed by equal annual reductions until duty free by 2010 | Passenger cars and ve |

Special Staging Categories: Jordanian Exports to the US

| Category | Tariff Elimination Rule | Products Affected |
|---|---|---|
| F | Tariff elimination in one step, effective January 1, 2010 | Certain textiles apparels exported unc QIZ regime |
| G | Immediate tariff elimination | GSP exports |
| H | No change for first 3 years followed by 5% reduction in year 4, 10% reduction in years 5 and 6. Thereafter, equal annual reductions until duty is 44.5% of base rate in 2010. | Alcoholic beverages |
| I | Special provisions | Re-exported manufa goods |

## Annex 4 Selected Performance Indicators of Industrial Sectors (000 JD)

| Economic Activity | Year | No. of enterprises | No. of employees | Gross Value Added per Employee | Total Payroll per Employee | Operating Surplus / Output | Operating Surplus / Fixed Assets | Output | |
|---|---|---|---|---|---|---|---|---|---|
| Extraction of crude petroleum and natural gas | 1997 | 1 | 74 | 137.77 | 16.41 | 66% | 151% | 12,068 | |
| | 1998 | 1 | 78 | 118.53 | 17.68 | 65% | 120% | 10,761 | |
| | 1999 | 1 | 75 | 108.21 | 7.57 | 63% | 190% | 10,999 | |
| | 2000 | 1 | 74 | 141.67 | 8.37 | 83% | 406% | 11,112 | |
| | 2001 | - | 73 | 117.68 | 7.29 | 81% | 303% | 9,082 | |
| | 2002 | - | 180 | 70.17 | 7.71 | 76% | 264% | 13,251 | |
| | 2003 | - | 173 | 71.06 | 6.17 | 77% | 120% | 12,965 | |
| Mining and quarrying | 1994 | 129 | 8,349 | 15.24 | 5.14 | 14% | 16% | 236,279 | |
| | 1995 | 131 | 8,025 | 22.86 | 6.08 | 27% | 38% | 286,747 | |
| | 1996 | 143 | 8,491 | 22.35 | 6.36 | 22% | 32% | 315,032 | |
| | 1997 | 144 | 8,981 | 21.40 | 6.04 | 21% | 30% | 328,123 | |
| | 1998 | 152 | 9,270 | 20.90 | 7.29 | 14% | 18% | 355,034 | |
| | 1999 | 128 | 8,470 | 22.63 | 10.21 | 6% | 7% | 373,039 | |
| | 2000 | 129 | 7,895 | 24.12 | 7.71 | 18% | 21% | 332,349 | |
| | 2001 | - | 7,520 | 25.32 | 7.83 | 23% | 29% | 331,514 | |
| | 2002 | - | 7,127 | 26.51 | 8.43 | 21% | 33% | 349,007 | |
| | 2003 | - | 7,422 | 26.20 | 8.40 | 22% | 36% | 352,254 | |
| Manufacture of food products and beverages | 1994 | 1,778 | 17,307 | 6.63 | 1.49 | 10% | 19% | 405,734 | |
| | 1995 | 1,939 | 18,504 | | | 7% | 14% | 504,19 | |

| Economic Activity | Year | No. of enterprises | No. of employees | Gross Value Added per Employee | Total Payroll per Employee | Operating Surplus / Output | Operating Surplus / Fixed Assets | Output | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 6.22 | 1.60 | | | 4 | |
| | 1996 | 1,994 | 18,052 | 6.24 | 1.65 | 7% | 14% | 459,628 | |
| | 1997 | 2,112 | 20,167 | 5.69 | 1.73 | 4% | 7% | 550,568 | |
| | 1998 | 2,218 | 20,109 | 5.92 | 2.07 | 2% | 4% | 519,342 | |
| | 1999 | 2,881 | 22,395 | 6.02 | 1.98 | 5% | 8% | 506,516 | |
| | 2000 | 3,195 | 24,119 | 6.29 | 2.08 | 7% | 12% | 545,448 | |
| | 2001 | - | 25,294 | 6.20 | 2.03 | 9% | 15% | 540,361 | |
| | 2002 | - | 25,658 | 6.63 | 2.01 | 9% | 18% | 618,567 | |
| | 2003 | - | 26,522 | 7.12 | 2.01 | 10% | 22% | 674,546 | |
| Manufacture of tobacco products | 1994 | 6 | 1,224 | 70.28 | 3.89 | 4% | 24% | 107,400 | |
| | 1995 | 6 | 1,264 | 74.63 | 3.78 | 3% | 19% | 117,468 | |
| | 1996 | 8 | 1,428 | 71.42 | 3.19 | 5% | 24% | 127,491 | |
| | 1997 | 8 | 1,052 | 91.62 | 2.54 | 3% | 13% | 131,901 | |
| | 1998 | 8 | 1,047 | 98.76 | 4.70 | 4% | 19% | 146,578 | |
| | 1999 | 6 | 978 | 119.48 | 4.47 | 10% | 42% | 168,169 | |
| | 2000 | 6 | 931 | 140.00 | 5.29 | 11% | 69% | 184,362 | |
| | 2001 | - | 996 | 130.57 | 5.04 | 4% | 24% | 200,939 | |
| | 2002 | - | 1,148 | 114.65 | 4.86 | 0% | 0% | 211,744 | |
| | 2003 | - | 1,162 | 114.67 | 5.07 | 2% | 12% | 216,156 | |
| Manufacture of textiles | 1994 | 309 | 3,291 | 5.81 | 1.67 | 18% | 21% | 51,035 | |

| Economic Activity | Year | No. of enterprises | No. of employees | Gross Value Added per Employee | Total Payroll per Employee | Operating Surplus / Output | Operating Surplus / Fixed Assets | Output | |
|---|---|---|---|---|---|---|---|---|---|
| | 1995 | 348 | 3,711 | 5.56 | 1.65 | 18% | 17% | 55,061 | |
| | 1996 | 354 | 4,118 | 4.58 | 1.82 | 8% | 9% | 62,141 | |
| | 1997 | 365 | 3,487 | 4.89 | 1.76 | 7% | 7% | 54,122 | |
| | 1998 | 363 | 3,191 | 8.47 | 2.10 | 20% | 26% | 65,947 | |
| | 1999 | 625 | 3,524 | 5.97 | 1.83 | 15% | 22% | 51,391 | |
| | 2000 | 564 | 2,867 | 6.80 | 2.05 | 16% | 22% | 47,524 | |
| | 2001 | - | 3,327 | 6.61 | 2.01 | 17% | 26% | 53,114 | |
| | 2002 | - | 3,317 | 6.52 | 1.97 | 19% | 33% | 50,842 | |
| | 2003 | - | 3,029 | 8.01 | 2.18 | 23% | 42% | 53,029 | |
| Manufacture wearing apparel, dressing fur | 1994 | 1,306 | 7,122 | 2.40 | 0.94 | 18% | 25% | 42,038 | |
| | 1995 | 1,485 | 7,209 | 2.44 | 1.04 | 20% | 62% | 40,314 | |
| | 1996 | 1,515 | 6,950 | 1.91 | 0.93 | 12% | 30% | 37,175 | |
| | 1997 | 1,599 | 6,709 | 2.43 | 1.01 | 17% | 45% | 39,213 | |
| | 1998 | 1,614 | 7,232 | 2.12 | 1.14 | 12% | 15% | 37,589 | |
| | 1999 | 2,045 | 12,108 | 2.18 | 1.15 | 14% | 16% | 55,736 | |
| | 2000 | 2,083 | 16,073 | 2.53 | 1.26 | 23% | 27% | 63,719 | |
| | 2001 | - | 16,938 | 3.06 | 1.31 | 26% | 47% | 88,220 | |
| | 2002 | - | 16,671 | 4.45 | 1.44 | 34% | 89% | 128,387 | |
| | 2003 | - | 17,207 | 5.89 | 1.54 | 40% | 102% | 171,384 | |
| Tanning leather; manufacture | 1994 | 239 | 2,051 | | | 18% | 41% | 29,109 | |

| Economic Activity | Year | No. of enterprises | No. of employees | Gross Value Added per Employee | Total Payroll per Employee | Operating Surplus / Output | Operating Surplus / Fixed Assets | Output | |
|---|---|---|---|---|---|---|---|---|---|
| luggage, footwear | | | | 4.67 | 1.56 | | | | |
| | 1995 | 249 | 1,676 | 4.50 | 1.69 | 13% | 38% | 28,591 | |
| | 1996 | 256 | 2,385 | 3.50 | 1.58 | 7% | 23% | 33,811 | |
| | 1997 | 271 | 2,419 | 3.91 | 1.60 | 11% | 23% | 30,088 | |
| | 1998 | 333 | 2,097 | 3.93 | 1.67 | 13% | 32% | 23,299 | |
| | 1999 | 404 | 2,329 | 2.97 | 1.35 | 5% | 8% | 20,047 | |
| | 2000 | 345 | 1,982 | 4.05 | 2.00 | 8% | 19% | 28,160 | |
| | 2001 | - | 2,511 | 3.07 | 1.50 | 6% | 7% | 21,962 | |
| | 2002 | - | 2,462 | 2.97 | 1.52 | 5% | 7% | 20,718 | |
| | 2003 | - | 1,645 | 3.85 | 1.80 | 13% | 34% | 17,782 | |
| Manufacture of wood, except furniture | 1994 | 1,045 | 2,842 | 2.84 | 0.72 | 29% | 77% | 18,161 | |
| | 1995 | 1,240 | 3,423 | 2.02 | 0.78 | 12% | 28% | 21,895 | |
| | 1996 | 1,277 | 3,762 | 1.55 | 0.71 | 11% | 29% | 19,859 | |
| | 1997 | 1,303 | 3,542 | 2.33 | 0.93 | 19% | 33% | 19,853 | |
| | 1998 | 1,382 | 3,873 | 2.26 | 0.78 | 20% | 70% | 22,679 | |
| | 1999 | 1,213 | 2,321 | 1.95 | 0.61 | 19% | 48% | 13,283 | |
| | 2000 | 1,168 | 2,198 | 1.88 | 0.75 | 14% | 32% | 12,942 | |
| | 2001 | - | 2,624 | 1.77 | 0.66 | 16% | 47% | 12,879 | |
| | 2002 | - | 2,999 | 2.20 | 0.78 | 17% | 40% | 18,101 | |
| | 2003 | - | 3,150 | 2.77 | 0.72 | 23% | 78% | 23,460 | |

| Economic Activity | Year | No. of enterprises | No. of employees | Gross Value Added per Employee | Total Payroll per Employee | Operating Surplus / Output | Operating Surplus / Fixed Assets | Output | |
|---|---|---|---|---|---|---|---|---|---|
| Manufacture of paper and paper products | 1994 | 64 | 3,194 | 7.45 | 2.24 | 14% | 28% | 81,041 | |
| | 1995 | 66 | 2,998 | 6.76 | 2.49 | 8% | 19% | 91,143 | |
| | 1996 | 75 | 3,288 | 5.67 | 2.49 | 4% | 8% | 85,624 | |
| | 1997 | 77 | 3,504 | 6.00 | 2.82 | 2% | 3% | 89,863 | |
| | 1998 | 77 | 3,301 | 5.11 | 2.79 | -1% | -1% | 89,884 | |
| | 1999 | 89 | 3,445 | 7.27 | 2.72 | 8% | 12% | 91,534 | |
| | 2000 | 95 | 2,714 | 9.99 | 3.12 | 7% | 8% | 89,671 | |
| | 2001 | - | 2,842 | 11.89 | 3.09 | 11% | 15% | 104,411 | |
| | 2002 | - | 2,870 | 12.56 | 3.11 | 12% | 17% | 106,056 | |
| | 2003 | - | 2,980 | 11.95 | 3.08 | 11% | 15% | 106,859 | |
| Publishing, printing, reproducing recorded media | 1994 | 202 | 3,055 | 4.69 | 2.35 | 13% | 16% | 37,161 | |
| | 1995 | 203 | 2,999 | 7.32 | 2.82 | 18% | 25% | 48,776 | |
| | 1996 | 209 | 3,030 | 5.84 | 2.82 | 10% | 13% | 46,890 | |
| | 1997 | 226 | 3,450 | 6.66 | 3.22 | 7% | 8% | 55,265 | |
| | 1998 | 235 | 3,480 | 7.79 | 3.26 | 16% | 19% | 60,424 | |
| | 1999 | 420 | 4,199 | 7.72 | 3.18 | 18% | 22% | 67,467 | |
| | 2000 | 394 | 3,594 | 8.97 | 3.69 | 15% | 22% | 68,849 | |
| | 2001 | - | 4,277 | 8.64 | 3.44 | 16% | 27% | 78,830 | |
| | 2002 | - | 4,667 | 8.85 | 3.74 | 15% | 23% | 84,140 | |
| | 2003 | - | 4,619 | | | 19% | 43% | 88,862 | |

| Economic Activity | Year | No. of enterprises | No. of employees | Gross Value Added per Employee | Total Payroll per Employee | Operating Surplus / Output | Operating Surplus / Fixed Assets | Output | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 9.50 | 3.41 | | | | |
| Manufacture of coke, refined petroleum products | 1994 | 1 | 3,947 | 7.72 | 5.27 | 1% | 16% | 380,864 | |
| | 1995 | 1 | 3,863 | 9.83 | 5.36 | 3% | 42% | 398,554 | |
| | 1996 | 1 | 3,585 | 14.95 | 6.67 | 6% | 96% | 425,091 | |
| | 1997 | 1 | 3,533 | 16.99 | 6.15 | 6% | 117% | 468,940 | |
| | 1998 | 1 | 3,459 | 17.56 | 6.88 | 5% | 92% | 468,281 | |
| | 1999 | 1 | 3,520 | 17.78 | 6.40 | 6% | 50% | 459,211 | |
| | 2000 | 1 | 3,418 | 18.58 | 6.53 | 6% | 41% | 471,263 | |
| | 2001 | - | 3,291 | 19.35 | 6.65 | 5% | 44% | 547,528 | |
| | 2002 | - | 3,463 | 19.47 | 6.71 | 5% | 39% | 595,248 | |
| | 2003 | - | 3,493 | 19.28 | 6.94 | 5% | 40% | 597,981 | |
| Manufacture of chemicals, chemical products | 1994 | 184 | 8,550 | 11.03 | 3.71 | 8% | 25% | 516,094 | |
| | 1995 | 198 | 8,506 | 12.37 | 3.96 | 9% | 31% | 566,172 | |
| | 1996 | 215 | 9,368 | 11.11 | 3.81 | 8% | 23% | 542,592 | |
| | 1997 | 228 | 10,230 | 12.73 | 4.02 | 11% | 17% | 537,732 | |
| | 1998 | 234 | 10,963 | 15.23 | 4.33 | 12% | 22% | 647,432 | |
| | 1999 | 202 | 9,921 | 18.12 | 5.53 | 12% | 21% | 613,329 | |
| | 2000 | 219 | 10,951 | 15.28 | 4.76 | 12% | 21% | 595,038 | |
| | 2001 | - | 11,653 | 15.01 | 4.63 | 13% | 23% | 585,392 | |
| | 2002 | - | 11,110 | 16.85 | 5.03 | 14% | 28% | 645,736 | |

| Economic Activity | Year | No. of enterprises | No. of employees | Gross Value Added per Employee | Total Payroll per Employee | Operating Surplus / Output | Operating Surplus / Fixed Assets | Output | |
|---|---|---|---|---|---|---|---|---|---|
| | 2003 | - | 11,609 | 16.94 | 5.06 | 15% | 34% | 663,140 | |
| Manufacture of rubber and plastics products | 1994 | 179 | 4,078 | 6.40 | 1.80 | 18% | 22% | 70,181 | |
| | 1995 | 188 | 4,486 | 5.13 | 1.94 | 4% | 6% | 96,129 | |
| | 1996 | 195 | 4,297 | 3.71 | 1.82 | -1% | -1% | 73,664 | |
| | 1997 | 207 | 4,750 | 5.74 | 1.93 | 5% | 4% | 97,377 | |
| | 1998 | 193 | 3,934 | 5.79 | 2.03 | 6% | 7% | 70,359 | |
| | 1999 | 213 | 3,865 | 7.33 | 2.27 | 11% | 14% | 85,938 | |
| | 2000 | 246 | 4,635 | 6.18 | 2.23 | 5% | 6% | 93,200 | |
| | 2001 | - | 5,209 | 6.72 | 2.26 | 10% | 13% | 102,764 | |
| | 2002 | - | 4,756 | 7.87 | 2.31 | 12% | 19% | 106,836 | |
| | 2003 | - | 4,646 | 8.50 | 2.29 | 14% | 21% | 110,195 | |
| Manufacture other non-metallic mineral products | 1994 | 1,948 | 13,426 | 8.79 | 1.78 | 21% | 25% | 237,036 | |
| | 1995 | 2,045 | 13,691 | 8.10 | 2.05 | 15% | 18% | 233,502 | |
| | 1996 | 2,061 | 13,658 | 7.85 | 2.06 | 15% | 18% | 231,759 | |
| | 1997 | 2,125 | 13,932 | 8.33 | 2.16 | 15% | 19% | 246,333 | |
| | 1998 | 2,183 | 14,009 | 7.45 | 2.20 | 13% | 15% | 227,521 | |
| | 1999 | 2,181 | 13,044 | 9.28 | 2.57 | 16% | 19% | 244,968 | |
| | 2000 | 2,288 | 13,655 | 8.81 | 2.61 | 14% | 18% | 255,640 | |
| | 2001 | - | 14,218 | 9.73 | 2.31 | 18% | 26% | 286,338 | |
| | 2002 | - | 13,857 | | | 21% | 33% | 307,33 | |

| Economic Activity | Year | No. of enterprises | No. of employees | Gross Value Added per Employee | Total Payroll per Employee | Operating Surplus / Output | Operating Surplus / Fixed Assets | Output | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 11.03 | 2.27 | | | 2 | |
| | 2003 | - | 14,020 | 11.97 | 2.44 | 22% | 41% | 338,317 | |
| Manufacture of basic metals | 1994 | 41 | 2,044 | 14.11 | 3.09 | 7% | 19% | 104,227 | |
| | 1995 | 32 | 1,862 | 14.59 | 3.29 | 6% | 17% | 105,258 | |
| | 1996 | 37 | 1,750 | 15.97 | 3.65 | 5% | 13% | 121,822 | |
| | 1997 | 36 | 1,839 | 15.03 | 3.77 | 4% | 10% | 107,045 | |
| | 1998 | 38 | 2,014 | 13.77 | 3.19 | 7% | 11% | 100,659 | |
| | 1999 | 103 | 2,887 | 12.63 | 3.07 | 5% | 6% | 122,384 | |
| | 2000 | 42 | 2,723 | 16.51 | 3.04 | 11% | 12% | 117,974 | |
| | 2001 | - | 2,578 | 19.81 | 3.21 | 14% | 19% | 143,053 | |
| | 2002 | - | 2,599 | 18.87 | 3.84 | 11% | 19% | 142,250 | |
| | 2003 | - | 3,426 | 20.03 | 3.81 | 14% | 27% | 185,876 | |
| Manufacture of fabricated metal products, except machinery and equipment | 1994 | 2,678 | 9,679 | 3.11 | 0.97 | 20% | 40% | 81,566 | |
| | 1995 | 2,969 | 10,805 | 2.92 | 1.09 | 13% | 18% | 97,305 | |
| | 1996 | 3,020 | 10,943 | 2.16 | 1.07 | 3% | 4% | 87,105 | |
| | 1997 | 3,118 | 11,060 | 2.53 | 1.15 | 8% | 11% | 86,496 | |
| | 1998 | 3,228 | 10,985 | 2.64 | 1.09 | 10% | 20% | 86,712 | |
| | 1999 | 3,785 | 11,215 | 3.08 | 1.14 | 14% | 21% | 91,269 | |
| | 2000 | 3,772 | 11,142 | 3.47 | 1.25 | 14% | 22% | 106,393 | |
| | 2001 | - | 11,226 | | | 16% | 31% | 120,60 | |

| Economic Activity | Year | No. of enterprises | No. of employees | Gross Value Added per Employee | Total Payroll per Employee | Operating Surplus / Output | Operating Surplus / Fixed Assets | Output | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 4.00 | 1.25 | | | 5 | |
| | 2002 | - | 12,303 | 3.52 | 1.19 | 15% | 30% | 120,298 | |
| | 2003 | - | 12,699 | 3.98 | 1.11 | 17% | 39% | 138,856 | |
| Manufacture of machinery and equipment n.e.c. | 1994 | 156 | 2,644 | 5.35 | 1.88 | 14% | 31% | 43,919 | |
| | 1995 | 170 | 2,600 | 5.59 | 2.16 | 11% | 23% | 49,497 | |
| | 1996 | 178 | 2,926 | 4.45 | 2.04 | 8% | 18% | 45,266 | |
| | 1997 | 175 | 2,895 | 5.94 | 2.30 | 13% | 22% | 44,841 | |
| | 1998 | 159 | 2,881 | 5.37 | 2.98 | 4% | 8% | 48,427 | |
| | 1999 | 298 | 2,752 | 5.71 | 2.54 | 10% | 16% | 41,997 | |
| | 2000 | 190 | 3,308 | 5.50 | 2.43 | 9% | 24% | 54,529 | |
| | 2001 | - | 3,451 | 6.06 | 2.68 | 10% | 22% | 58,323 | |
| | 2002 | - | 3,420 | 6.76 | 2.65 | 13% | 29% | 66,991 | |
| | 2003 | - | 3,672 | 6.86 | 2.63 | 13% | 30% | 72,201 | |
| Manufacture of electrical machinery n.e.c. | 1994 | 27 | 962 | 9.36 | 2.30 | 16% | 22% | 29,672 | |
| | 1995 | 27 | 918 | 7.89 | 2.45 | 9% | 13% | 31,421 | |
| | 1996 | 31 | 1,305 | 9.31 | 3.07 | 9% | 11% | 47,980 | |
| | 1997 | 28 | 903 | 7.69 | 2.96 | 1% | 1% | 31,794 | |
| | 1998 | 30 | 1,548 | 10.80 | 3.20 | 6% | 5% | 63,514 | |
| | 1999 | 86 | 1,767 | 8.05 | 2.97 | 4% | 3% | 62,766 | |
| | 2000 | 36 | 1,193 | 14.73 | 3.35 | 12% | 26% | 63,256 | |

| Economic Activity | Year | No. of enterprises | No. of employees | Gross Value Added per Employee | Total Payroll per Employee | Operating Surplus / Output | Operating Surplus / Fixed Assets | Output | |
|---|---|---|---|---|---|---|---|---|---|
| | 2001 | - | 1,352 | 13.27 | 3.38 | 10% | 25% | 71,747 | |
| | 2002 | - | 1,560 | 12.25 | 3.15 | 10% | 27% | 75,826 | |
| | 2003 | - | 1,727 | 13.74 | 2.94 | 11% | 30% | 88,247 | |
| Manufacture medical, precision, optics,watches | 1994 | 52 | 328 | 2.60 | 0.98 | 13% | 8% | 2,009 | |
| | 1995 | 66 | 493 | 3.02 | 1.44 | 13% | 12% | 3,413 | |
| | 1996 | 68 | 400 | 2.65 | 1.88 | 0% | 0% | 3,292 | |
| | 1997 | 75 | 524 | 3.85 | 1.80 | 7% | 4% | 5,214 | |
| | 1998 | 73 | 488 | 4.12 | 2.36 | 4% | 5% | 5,470 | |
| | 1999 | 168 | 805 | 3.69 | 1.84 | 9% | 12% | 7,062 | |
| | 2000 | 172 | 883 | 3.29 | 1.85 | 5% | 5% | 7,809 | |
| | 2001 | - | 1,074 | 2.86 | 1.79 | 0% | 0% | 8,079 | |
| | 2002 | - | 967 | 4.97 | 2.18 | 12% | 11% | 11,044 | |
| | 2003 | - | 994 | 5.35 | 2.29 | 12% | 13% | 12,255 | |
| Manufacture of motor vehicles, trailers | 1994 | 32 | 1,103 | 14.28 | 2.18 | 30% | 197% | 43,018 | |
| | 1995 | 31 | 1,107 | 7.40 | 2.10 | 17% | 92% | 29,215 | |
| | 1996 | 33 | 963 | 3.19 | 2.22 | 1% | 1% | 15,043 | |
| | 1997 | 33 | 821 | 7.01 | 2.35 | 18% | 61% | 16,638 | |
| | 1998 | 28 | 702 | 6.00 | 2.52 | 12% | 42% | 14,007 | |
| | 1999 | 71 | 1,076 | 6.40 | 2.57 | 9% | 20% | 20,135 | |
| | 2000 | 49 | 1,057 | | | 14% | 46% | 23,935 | |

| Economic Activity | Year | No. of enterprises | No. of employees | Gross Value Added per Employee | Total Payroll per Employee | Operating Surplus / Output | Operating Surplus / Fixed Assets | Output | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 6.75 | 2.55 | | | | |
| | 2001 | - | 1,327 | 7.49 | 2.41 | 18% | 80% | 30,380 | |
| | 2002 | - | 1,508 | 7.79 | 2.51 | 19% | 80% | 33,597 | |
| | 2003 | - | 1,486 | 7.55 | 2.55 | 17% | 63% | 31,748 | |
| Manufacture of other transport equipment | 1994 | 3 | 22 | 3.07 | 1.30 | 25% | 75% | 134 | |
| | 1995 | 4 | 20 | 2.64 | 1.18 | 30% | 33% | 73 | |
| | 1996 | 4 | 20 | 1.21 | 1.02 | -5% | -4% | 43 | |
| | 1999 | 3 | 15 | 3.69 | 2.18 | 5% | 4% | 97 | |
| | 2000 | 3 | 7 | 9.96 | 4.06 | 23% | 80% | 140 | |
| | 2001 | - | 8 | 2.74 | 2.33 | -7% | -7% | 54 | |
| | 2002 | - | 12 | 6.73 | 2.54 | 29% | 64% | 144 | |
| | 2003 | - | 10 | 10.88 | 2.45 | 40% | 106% | 185 | |
| Manufacture of furniture; manufacturing n.e.c. | 1994 | 2,105 | 8,539 | 2.78 | 1.08 | 18% | 44% | 65,575 | |
| | 1995 | 2,378 | 9,233 | 2.56 | 1.15 | 13% | 24% | 69,654 | |
| | 1996 | 2,439 | 10,025 | 2.27 | 1.11 | 11% | 20% | 66,793 | |
| | 1997 | 2,476 | 9,661 | 2.49 | 1.03 | 16% | 28% | 60,460 | |
| | 1998 | 2,537 | 9,717 | 3.05 | 1.24 | 17% | 30% | 73,124 | |
| | 1999 | 3,272 | 10,073 | 2.58 | 1.09 | 16% | 29% | 69,850 | |
| | 2000 | 3,381 | 12,372 | 2.30 | 1.04 | 15% | 29% | 71,956 | |
| | 2001 | - | 11,581 | 2.70 | 1.10 | 15% | 30% | 83,759 | |

| Economic Activity | Year | No. of enterprises | No. of employees | Gross Value Added per Employee | Total Payroll per Employee | Operating Surplus / Output | Operating Surplus / Fixed Assets | Output | |
|---|---|---|---|---|---|---|---|---|---|
| | 2002 | - | 10,213 | 3.14 | 1.22 | 15% | 35% | 88,641 | |
| | 2003 | - | 9,894 | 3.51 | 1.20 | 19% | 45% | 87,872 | |
| Electricity, gas, steam and hot water supply | 1994 | 3 | 5,169 | 13.55 | 4.90 | 15% | 7% | 151,997 | |
| | 1995 | 3 | 5,315 | 15.02 | 4.47 | 19% | 9% | 166,648 | |
| | 1996 | 3 | 5,508 | 15.18 | 4.95 | 14% | 4% | 193,304 | |
| | 1997 | 3 | 6,043 | 16.03 | 5.15 | 12% | 3% | 213,497 | |
| | 1998 | 3 | 5,745 | 16.95 | 5.98 | 9% | 3% | 226,632 | |
| | 1999 | 5 | 5,784 | 16.87 | 5.48 | 6% | 1% | 233,577 | |
| | 2000 | 5 | 6,313 | 16.33 | 5.21 | 5% | 1% | 248,578 | |
| | 2001 | - | 6,639 | 17.80 | 5.34 | 9% | 3% | 261,205 | |
| | 2002 | - | 6,749 | 19.04 | 5.39 | 12% | 4% | 285,265 | |
| | 2003 | - | 6,864 | 17.99 | 5.32 | 9% | 3% | 291,240 | |
| Total Industry | 1994 | 12,490 | 109,361 | 8.11 | 2.29 | 11.5% | 20% | 2,746,714 | |
| | 1995 | 13,782 | 113,120 | 8.53 | 2.42 | 11.0% | 20% | 3,066,330 | |
| | 1996 | 14,118 | 116,253 | 8.22 | 2.50 | 9.2% | 14% | 3,041,404 | |
| | 1997 | 14,614 | 119,988 | 8.79 | 2.58 | 9.5% | 13% | 3,254,265 | |
| | 1998 | 15,092 | 120,122 | 9.21 | 2.90 | 9.0% | 12% | 3,363,673 | |
| | 1999 | 18,200 | 126,569 | 9.43 | 3.03 | 9.3% | 11% | 3,410,762 | |
| | 2000 | 18,384 | 134,110 | 9.36 | 2.80 | 10.8% | 13% | 3,493,880 | |
| | 2001 | - | 140,00 | | | 12.3% | 17% | 3,740,5 | |

| Economic Activity | Year | No. of enterprises | No. of employees | Gross Value Added per Employee | Total Payroll per Employee | Operating Surplus / Output | Operating Surplus / Fixed Assets | Output | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 9 | 9.66 | 2.74 | | | 36 | |
| | 2002 | - | 139,616 | 10.36 | 2.84 | 12.8% | 19% | 4,080,021 | |
| | 2003 | - | 142,456 | 10.97 | 2.88 | 14.1% | 23% | 4,335,479 | |