ABSTRACT
This paper provides knowledge about the passenger cars imported to the Sudan in the last six years extending from Jan. 1999 to Oct. 2004 on the basis of statistical data supplied by the Sudanese general custom headship. The cars are classified into four groups according to their engine swept volume $X$: $X \leq 1000$ c.c., $1500 \leq X < 1000$ c.c., $3000 \leq X < 1500$ c.c., $X \geq 3000$ c.c. Passenger cars have been imported from over 35 countries in the last six years. Korea, with 50% to 96%, has been found to be the main supplier of cars of engine capacity $1000$ c.c. & less. Korea, with 33% to 92%, also leads the exporters of cars of engine capacity ranging between $1000$ & $1500$ c.c., but with relatively lower percentages than for the cars of the smaller size. For higher classes, i.e. $1500$ c.c. and above, Korea gave way to Japan, Germany, Saudi Arabia, Aruba and France to lead the exporters in most of the last six years. During that period 64410, 30121, 37129 and 171 passenger cars have been imported from groups 1, 2, 3 & 4 respectively for a total custom value of over 335 millions U.S.D.. 60% of the total number of cars came from Korea.

The paper draws the attention to the difficulties in availing the spare parts for cars imported from over 35 countries. As this paper is intended for presentation in the Sudanese-Korean friendship symposium, it contains some proposals and suggestions concerning that Korea should avail spare parts and maintenance shops where- and whenever needed, if Korea is to maintain its share and promotes its position in the Sudanese car markets.

Keywords: Passenger cars, Korea, Sudan

1. INTRODUCTION
The relatively rapid progressing living standard of a wide sector of the Sudanese people and the quick life rhythm in towns & cities make the private passenger car for most families necessary and unavoidable.

The progressively increasing population in Khartoum and the steadily extending distances between the city centre and country side provide a good business for quite a number of small cars to be used as limousine and taxi cabs.

Thanks the availability of the fuel as a result of the Sudanese oil exploitation and the relatively, simplified payment facilities, the passenger car market has grown up rapidly and the companies could sell, especially low class passenger cars, successfully. Low class passenger cars are subject to relatively low custom duties.

In the last six years - Jan. 1999 till Oct. 2004 - 131830 passenger cars of different classes have been imported from all over the world; 79612 out of those came from Korea. Those made over 60% of the total cars imported. The Korean share in the import volume of the passenger cars will be discussed below in details for each class - based on engine power.

Passenger cars have been imported from over thirty countries. Many Sudanese individuals imported their private cars from countries, where they used to live or study; it is not necessarily that the cars had been produced in the same country. Table (1) shows the numbers of the passenger car export countries for the period Jan. 1999 - Oct. 2004. The table illustrates how numerous the export countries are. The related difficulties concerning the spare parts availability are discussed below.
Table 1: The numbers of the export countries for different passenger car classes & export years.

<table>
<thead>
<tr>
<th>P.Car.class X C.C</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>X ≤ 1000</td>
<td>24 *</td>
<td>29 *</td>
<td>23 *</td>
<td>17 *</td>
<td>16 *</td>
<td>12 *</td>
</tr>
<tr>
<td>1500 ≥ X ≥ 1000</td>
<td>7 *</td>
<td>13 *</td>
<td>22 *</td>
<td>20 *</td>
<td>20 *</td>
<td>18 *</td>
</tr>
<tr>
<td>3000 ≥ X ≥ 1500</td>
<td>16 *</td>
<td>33 *</td>
<td>37 *</td>
<td>29 *</td>
<td>24 *</td>
<td>25 *</td>
</tr>
<tr>
<td>X ≥ 3000</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>6</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 2: The Korean and maximum country shares in % in passenger car import volume to the Sudan

<table>
<thead>
<tr>
<th>P.Car.class X C.C</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>X ≤ 1000</td>
<td>50</td>
<td>50</td>
<td>64</td>
</tr>
<tr>
<td>1500 ≥ X ≥ 1000</td>
<td>42.7</td>
<td>45</td>
<td>33</td>
</tr>
<tr>
<td>3000 ≥ X ≥ 1500</td>
<td>15.3</td>
<td>66</td>
<td>7.6</td>
</tr>
<tr>
<td>X ≥ 3000</td>
<td>0</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P.Car.class X C.C</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>X ≤ 1000</td>
<td>96</td>
<td>96</td>
<td>92</td>
</tr>
<tr>
<td>1500 ≥ X ≥ 1000</td>
<td>65</td>
<td>65</td>
<td>47</td>
</tr>
<tr>
<td>3000 ≥ X ≥ 1500</td>
<td>4.6</td>
<td>70</td>
<td>5.6</td>
</tr>
<tr>
<td>X ≥ 3000</td>
<td>0</td>
<td>58</td>
<td>0</td>
</tr>
</tbody>
</table>

Max. Country share, Korean share
KR. Korea, JP. Japan, FR. France, AW. Aruba, SA. Saudi Arabia, DR. Germany, KE. Kenya
* Incl Korea.

2. STATISTICAL ANALYSIS OF PASSENGER CARS IMPORT

2.1 GENERAL

The Statistical analysis is worked out from the import data for the last six years (Jan. 1999 - Oct. 2004) collected from the department of statistics and planning at the General Sudanese Custom Headship, which registers the important data for all imported cars: their classes, their export countries, their custom value and the custom duties plus all other related taxis.

Passenger cars are coded and classified by the tariff custom department according to their engine size in four main groups or classes. The engine size is expressed in engine capacity or swept volume in c.c., which is directly related to the engine power. The custom duties are mainly set according to the engine power i.e. engine capacity in cubic centimeter c.c. Group one comprises passenger cars of engine capacity 1000. c.c. and less; group two those of engine capacity ranging from 1000 to 1500 c.c; group three those of engine capacity ranging from 1500 to 3000 c.c; group four those of engine capacity above 3000 c.c.
2.2 PASSENGER CARS OF ENGINE CAPACITY \(\leq 1000\) c.c.

Examples for these cars are Tico, Core, Matiz, Sirion, Gangan, Polo, Maroli, Atoz, Damas, Towner … etc. In the last six years, 64410 cars of this type, partially used, were imported from over 35 countries; some of them were countries of origin. The custom value of those cars was over 90 millions U.S.D. Korea with 55840 cars i.e. 87% was the main supplier of cars of this group to the Sudan. In the year 2001, 25592 cars of this type came from Korea alone. This constituted 85% of the total import volume of this car class in 2001. 96.4% of the import volume came also from Korea in the subsequent year 2002 with 12561 cars of this class. Other exporting countries were Japan, Saudi Arabia, China, India, Germany, Croatia and so many others.

Table (2) shows the Korean and the maximum country share in % in the car import volume to the Sudan for the period Jan. 1999-Oct. 2004. As seen from the table Korea has not only been dominant in the last six years, but also an important major exporter, supplying the Sudan with passenger cars of engine capacity \(\leq 1000\) c.c. Figures 1 & 2 show respectively the number of cars and their custom value together with the relevant Korean share in % for the above mentioned period. Both figures Show that Korea has been leading the small passenger car export to the Sudan during the considered period. The influence of the custom laws for the investment encouragement and those for production and consumption taxes enforced in late 2000 made itself noticeable in the years 2001 & 2002. As per those laws the custom duties were either raised or reduced for the small cars. The result was a remarkable increase in the car import volume in the years 2001 & 2002.

2.3 PASSENGER CARS OF ENGINE CAPACITIES \(\geq 1000\) but \(\leq 1500\) c.c.

Example of these cars are Lanos, Corrolla, Lancer, Nobera, Tercell, … etc. Passenger cars of this class were also imported from over thirty countries; most of them were also countries of origin. 30121 cars of this type were imported in the period Jan. 1999 – Oct. 2004; 22643 (i.e. 75%) were Korean cars. The custom value of this group of cars was about 83 millions U.S.D. In the year 2001, 15704 out of 17049 (i.e 92%) cars of this class came from Korea.

As seen from tables 1&2 above, Korea has also been in the last six years a constant supplier to the Sudan for cars of the engine capacities ranging from 1000 to 1500 c.c., but with relatively less percentage than in the case of cars of engine capacity less than 1000c.c. Japan, Saudi Arabia, and Germany came next in exporter rank list.

Figures 3 & 4 show respectively the number of imported cars of engine capacity ranging from 1000 to 1500 c.c. and their custom value together with the relevant Korean share in % for the period Jan. 1999 - Oct. 2004.

As seen from those figures Korea remained in the leadership for this car class also. The influence of the above mentioned custom laws was relatively moderate because no drastic reduction in custom duties was allowed for this car class.

2.4 PASSENGER CARS OF ENGINE CAPACITY \(\geq 1500\) but \(\leq 3000\) c.c.

This group covers a wide range of passenger cars. Examples for these cars are Corolla (special), Cressida, Nobera, Panot, Corona, some classes of Aubi, Mercedes, and BMW, Camry… etc.

37129 passenger cars of this type were imported in the period Jan.1999 – Oct. 2004 from over forty countries; some of them were countries of origin. In the year 2001, 22523 cars for relatively very low custom value were imported from Germany alone, i.e. 84% of the import volume for that year and 61% of import volume for the whole six years. It could only be explained by the fact that, companies benefited from the investment encouraging laws.

The custom value of this group of cars was nearly 157 millions U.S.D. Excluding the year 2001, Japan came first in the last six years as exporter for cars of this group. Korea pended between the second and fourth rank with
15.3%, 7.6%, 1.6%, 4.6%, 5.6% and 6.6% for the years 1999 through to 2004 respectively.

Although Korea kept supplying the Sudan with cars of this class throughout the last six years, its percentage share was far below that for low classes passenger cars. This is clearly shown in Figures 5 and 6.

Cars from this group may be looked at by some Sudanese people as a saving capital. Relatively expensive Korean cars of this type lose its price relatively faster than the European or Japanese ones in the Sudanese markets due to lack of reliable maintenance and repair shops. In addition to that some Sudanese people think that, the Sudanese technical know-how in enhancing the Korean cars is not yet mature. European and later Japanese cars have gradually gained trust and confidence of the Sudanese car markets since early sixties of the last century.

2.5 PASSENGER CARS OF ENGINE CAPACITY $\geq 3000$ c.c.

Cars of this group are luxurious and generally used by business or very important persons. The high engine power provides means of comfort and welfare. Cars from this group are normally fully automated in steering, seats adjustment, side glasses controlling, central locking, air conditioning, trip monitoring and safety keeping ie ABS, ACF. Examples for cars of this group are Mercedes 600, BMW 760, Nissan Infinity, Toyota Lexus, Land Cruisers, Patrols …etc. Only 171 passenger cars of engine capacity $\geq 3000$ c.c. were imported from 13 countries in the last six years (Jan 1999- Oct. 2004) for a custom value of 5,64 millions U.S.D. (excl. November & December). That expressed a rate of increase in import volume of more than 210 cars per year. The corresponding rate of increase in custom value was slightly more than 10 millions U.S.D. per year. The custom values of imported passenger cars in the years 1999 and 2004 (excl. November and December) were 16 and 76 millions U.S.D. respectively. The Sudan passenger car markets received over 131000 cars for a custom value of more than 330 millions U.S.D. in the period Jan.1999-Oct.2004. With 60% overall percentage, Korea came first as passenger car exporter to the Sudanese markets.

It was also observed that the investment encouraging custom laws and the production and consumption regulations enforced late 2000 resulted in an abnormal increase in the import volume of the passenger cars in the subsequent years 2001 & 2002. The import volume returned generally back to its normal trend in the year 2003 onwards.

The considered imported passenger cars were as diverse as their numerous export countries and models. That explained the bad need for a wide range of spare parts and accessories. Figures 9 and 10 show the imported tonnages and the custom value of the spare parts for the period Jan.1999-Oct.2004. As seen from the Figure 9, 64330 tons of spare parts and accessories for a custom value of over 226 millions U.S.D. was imported in the last six years. [1].

The spare parts weight and custom value jumped from 4910 tons and 25.9 millions U.S.D. in the year 1999 to 20690 tons and 56.8 millions U.S.D. respectively in the year 2004. This problem should be considered by the

2.6 DISCUSSION OF THE ANALYSIS

The above analysis was based on actual figures conducted from the Sudanese General Custom Headship. According to those data the Sudanese passenger car markets have been steadily growing in the last six years extending from Jan.1999 to Oct.2004.

That was reflected by the increase in the yearly import volume of the passenger cars of engine capacity up to 3000 c.c. from 2462 in the year 1999 to 15564 cars in the year 2004 (excl. November & December). That expressed a rate of increase in import volume of more than 210 cars per year. The corresponding rate of increase in custom value was slightly more than 10 millions U.S.D. per year. The custom values of imported passenger cars in the years 1999 and 2004 (excl. November and December) were 16 and 76 millions U.S.D. respectively. The Sudan passenger car markets received over 131000 cars for a custom value of more than 330 millions U.S.D. in the period Jan.1999-Oct.2004. With 60% overall percentage, Korea came first as passenger car exporter to the Sudanese markets.
Koreans as main car exporter, if they want to keep and promote their share in the Sudanese car markets.

K. Nasr Eldin & M. A. Siraj [2] carried out a statistical and engineering study on vehicles of engine capacity less than 1000 c.c. The authors stated the advantages and disadvantages of that type of vehicles.

As advantages came the low fuel consumption, the relatively low price as a result of low custom duties and the easiness of cruising and parking in markets and crowded zones.

As disadvantages the followings were mentioned:

- Relatively small ground clearance.
- More sensitivity to excess load.
- Weak body and lack of safety in case of accidents.
- Rapid wear for front drive couplings.
- Need for frequent overhauling of the door glass gears and locks.
- Prone to easy stealing due to unsafe locks.
- A/C loads and heats up the engine noticeably.
- When loaded, the height of the centre of gravity increases i.e. Risk of overturning at high speeds.

As a matter of fact, some of the listed disadvantages depend on the user rather than on the car itself, nevertheless the above mentioned drawbacks should be considered by the Koreans right now before the Sudanese car markets fix a negative judgment, which may be very expensive to be changed later.

3. CONCLUSIONS

The Korean automobile sector is strongly represented in the Sudanese passenger car markets. 60% of all passenger cars imported to the Sudan came in the last six year Jan. 1999-Oct. 2004 from Korea. The Korean share in import volume of low classes cars was over 90%. If that share is to be maintained and promoted mutual efforts should be made by both partners, the Sudanese & Korean, in the following respect:

1. The Koreans should avail the spare part and technical Know- how wherever and whenever needed in competent workshops.
2. Automobile service centers should be planned and erected within the reach of car owners.
3. Training of automobile technicians is necessary to acquaint the Sudanese markets with the Korean technology and to attract more customers for high class cars.
4. Trials should always be made to conserve the price advantages and to extend that to cover the high classes cars to power the market in favor of the Korean products.

Last but not least, the car trade is considered to be an established firm link in the Sudanese-Korean partnership providing a good opportunity for experience exchange and mutual understanding.

REFERENCES
Figure (1-A): The number of imported cars of engine capacity ≤ 1000 c.c.

Figure (1-B): The Korean share in % in imported cars of engine capacity ≤ 1000 c.c.

Figure (2-A): The custom value of imported cars of engine capacity ≤ 1000 c.c.

Figure (2-B): The Korean share in % in custom value of imported cars of engine capacity ≤ 1000 c.c.
Figure (3-A): The number of imported cars of engine capacity \( \geq 1000 \text{ c.c.} \) & \( \leq 1500 \text{ c.c.} \).

Figure (3-B): The Korean share in % in imported cars, of engine capacity \( \geq 1000 \text{ c.c.} \) & \( \leq 1500 \text{ c.c.} \).

Figure (4-A): The custom value of imported cars of engine capacity \( \geq 1000 \text{ c.c.} \) & \( \leq 1500 \text{ c.c.} \).

Figure (4-B): The Korean share in % in custom value of imported cars of engine capacity \( \geq 1000 \text{ c.c.} \) & \( \leq 1500 \text{ c.c.} \).
Figure (5-A): The number of imported cars of engine capacity $\leq 3000$ c.c. & $\geq 1500$ c.c.

Figure (5-B): The Korean share in % in imported cars of engine capacity $\leq 3000$ c.c. & $\geq 1500$ c.c.

Figure (6-A): The custom value of imported cars of engine capacity $\leq 3000$ c.c. & $\geq 1500$ c.c.

Figure (6-B): The Korean share in % in custom value of imported cars of engine capacity $\leq 3000$ c.c. & $\geq 1500$ c.c.
Figure (7-A): The number of imported cars of engine capacity ≥ 3000 c.c.

Figure (7-B): The Korean share in % in imported cars of engine capacity ≥ 3000 c.c.

Figure (8-A): The custom value of imported cars of engine capacity ≥ 3000 c.c.

Figure (8-B): The Korean share in % in custom value of imported cars of engine capacity ≥ 3000 c.c.
Figure (9): The weight of the imported spare parts during the period (Jan.1999 - Oct.2004)

Figure (10): The custom value of the imported spare parts during the period (Jan.1999 - Oct.2004)