

# **The economic importance of transportation and the circular economy of Iraq**

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## **Abstract**

*Transportation is of great importance in supporting the economy of Iraq and its one of the elements in the process of developing a strategic plan for the infrastructure of Iraq, where the concept of transportation and its importance is the mainstay of life, and the contribution of the transport sector to economic development is evident in that it helps effectively in linking production areas with consumption areas and in securing the movement of individuals And the transportation of raw materials and goods to and from investment areas, as it is considered a catalyst in the exploitation of natural resources, especially minerals, which are often concentrated in remote and sparsely populated areas, and the importance of the transport sector in the employment of manpower and the provision of Employment opportunities for a large segment of the population, whether in the field of transport itself or in other fields related to it or affected by its development; Consequently, the contribution of this sector must be recognized in absorbing the increasing numbers of people entering the workforce and thus in solving the problem of unemployment and the many social ills that result from it. besides, the provision of transportation of various kinds contributes significantly to the increase in cultural exchange between peoples and thus supports the*

*development Human thought and the flourishing of science and the spread of its gains to spread to all countries of the world, and also transportation plays a major role in supporting and renewing the economic cycle of Iraq, as this research aims to clarify all the concepts and factors that affect the formation of the Iraqi economy.*

**Keyword:** investment, economic environment, investment in transportation.

**JEL:** LA1, LA2, P22

## **1. Introduction**

The Iraq one of the countries with have many sources for the economy such as oil, revers, ports, transportation, and industry.

From time to time the Iraqi government consider one or mor of these sources as the main source of the country's economy because many reasons which make the Iraq decided these decisions like the program in 1996 exchange the oil -for food , The program was in operation from December 1996 until March 2003. Observers generally agree that the program substantially eased, but did not eliminate, human suffering in Iraq, (1). this was after the war period which was very hard for the Iraqi people and the economy at that time so in that time the Iraq decide to depends more on other sources and the transportation was one of these sources . therefore the Iraqi government started to develop the transportation and they consider that the transport system will support the economy and create many opportunities for the people to work and use the system in their job also the system was one of the elements which impact on the trade with other countries such as turkey , Syria , Jordan and Kuwait .

After that the transportation became very important for the Iraqi economy and the domestic, foreign trade.

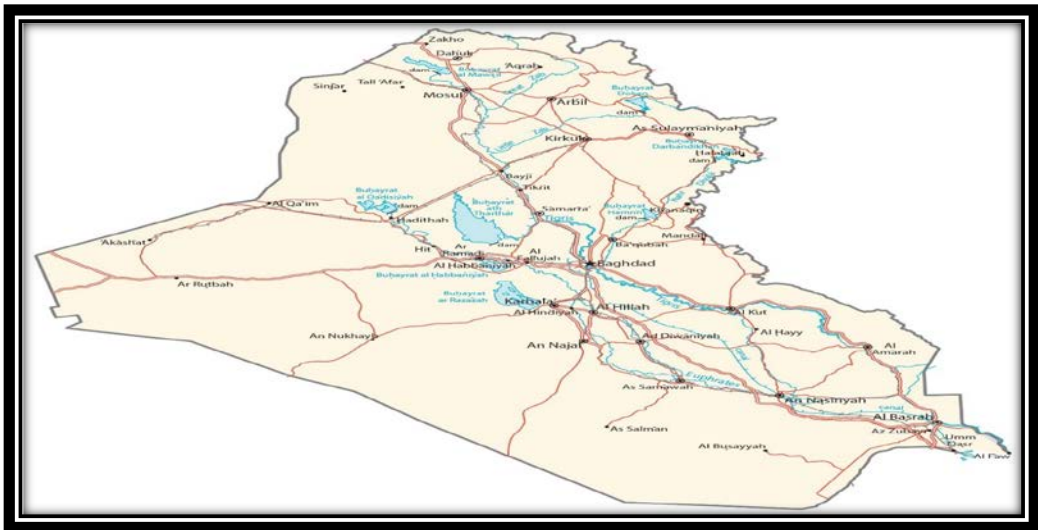
## **2. The transportation system in Iraq**

The city of Baghdad has been reshaped by the development of expressways through the city and by passes built since the 1970s. By 2002, Iraq had 45,550 km (28,304 mi) of roads, of which 38,400 km (23,861 mi) were paved. There were some 1,422,032 cars and 332,026 commercial vehicles in use as of 2000.

Railroads are owned and operated by the Iraqi State Railways Administration. A standard-gauge railroad connects Iraq with Jordan and Syria, and nearly all the old meter-gauge line connecting Irbil in the north with Basra, by way of Kirkuk and Baghdad, has been replaced. In 2002, there were about 2,339 km (1,453 mi) of railway lines.

Iraq had 150 airports in 2002, of which 77 had paved runways. However, an unknown number were damaged during the March-April 2003 war. Baghdad, Basra, and Mosul have international airports. Iraq Airways is the state-owned carrier; in the 1980s, its international flights landed only at night because of the Iraqi-Iranian war. The war also virtually closed Iraq's main port of Basra and the new port of

Umm Qasr on the Persian Gulf. Iraq has some 1,015 km (630 mi) of waterways; the Shatt al Arab is usually navigable by maritime traffic for 130 km (81 mi); the Tigris and Euphrates has navigable sections for shallow-draft boats, and the Shatt al Basrah canal was navigable by shallow-draft craft before closing in 1991 because of the Gulf War. Expansion of Iraq's merchant marine, which totaled 1,470,000 GRT in 1980, was halted by the war with Iran and again by the Persian Gulf War; by 2002, the merchant marine totaled only 25 ships with a total capacity of 186,709 GRT (2)



**Fig. 1.** Iraqi map  
 Source:<https://gisgeography.com/iraq-map/> (3)

### 3. Importance of the transportation in Iraq

The importance of the transport sector in general has an impact on all commercial and industrial sectors, especially in light of the successive developments in these activities, whose growth and development cannot be envisioned without an advanced transport sector consistent with its bidding. It is imperative to monitor the main features of the reality, challenges and future of this growing sector. Day after day, the pace of activity in it is increasing, and the volume of investments that are estimated in billions is increasing, until it has become a sector that attracts dozens of manpower. Therefore, the future is promising, the prospects are wide, and investment opportunities for the private sector are many, and this is what puts this sector in front of many and many challenges, perhaps the most prominent of which is a challenge. The increasing demand for logistical transportation services, which is growing daily (4)

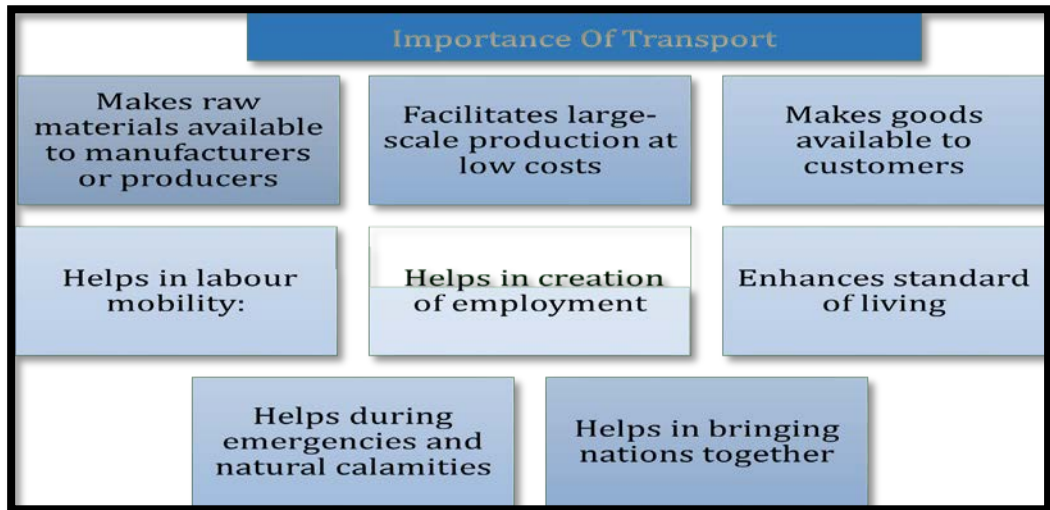


Fig. 2. Iraqi map

Source: <https://www.google.com/search?q=importance+of+transportation&source>.

#### 4. The Circular Economy Concept and The Transportation Economy

##### *Circular economy*

Circular economy is an economy constructed from societal production-consumption systems that maximizes the service produced from the linear nature-society-nature material and energy throughput flow. This is done by using cyclical materials flows, renewable energy sources and cascading. (5)

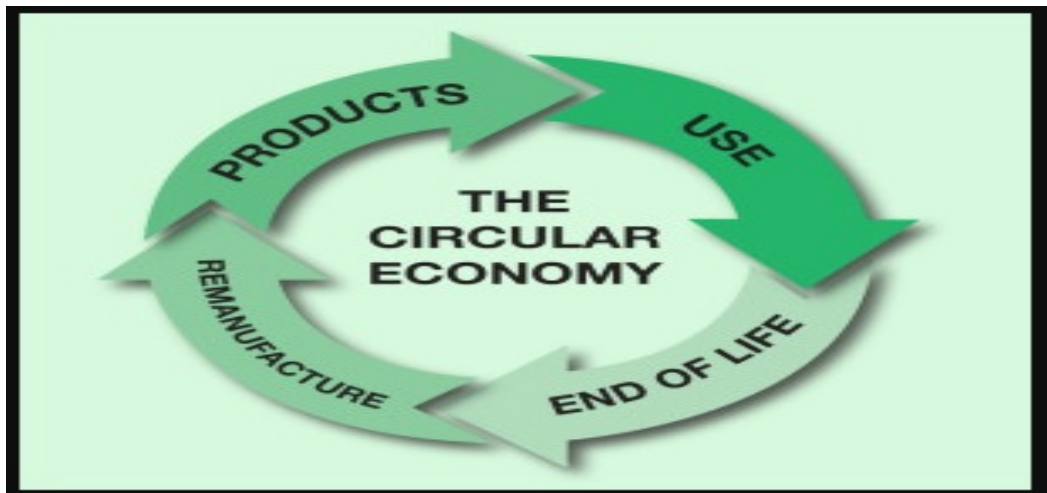


Fig. 3. The Circular Economy model (6)

Source : <https://www.therecyclor.com/posts/who-is-supporting-the-circular-economy>

Circular economy (CE) is currently a popular concept for future sustainable development promoted by the European Union and by several national governments (China, Japan, UK, France, Canada, The Netherlands, Sweden, Finland, etc). Also, many business enterprises around the world have introduced CE in their manufacturing sectors to shave energy and raw feeding materials. But for the moment the concept of circular economy is a collection of vague ideas from several technological fields and semi-scientific concepts. (7)

The Transportation Economy

A. Iraq’s Export and Import status:

Iraq entered the global trade market in mid-1800 as one of the grain exporting countries.

In early 1930 the crude oil became as a major export for the country which reached 49.3% of the national income in 1953, by 1980 the crude oil was 83% of the total exports while 17% was other products such as fertilizers, building materials, fresh and dried fruit. (8)

Iraq imports various goods: different goods from different markets such as Europe, Asia, America and Africa. As Iraq was engaged in very long wars from 1980 until around Mid-2003, the country needed different goods for economic reconstruction of industry and service sector were destroyed during the war. Most of these imported goods had supported the industries and contributed to the reestablishment of the destroyed infrastructure and thereafter supported the county’s exports. (9)

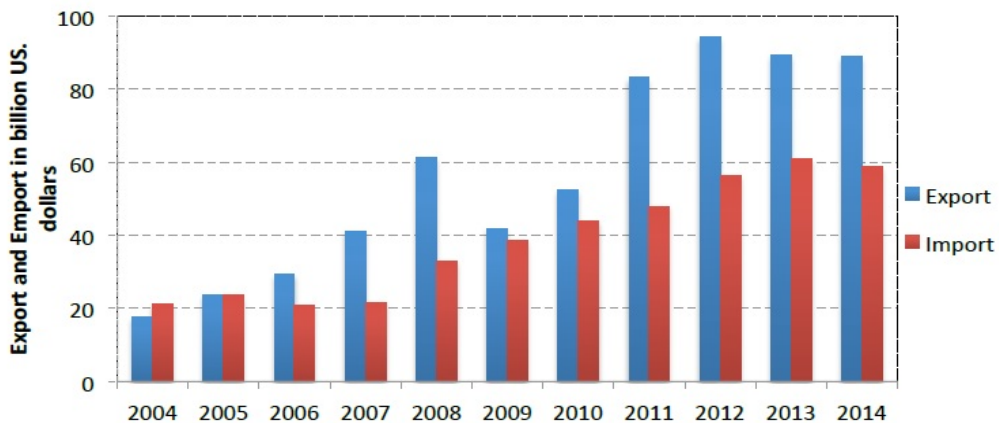


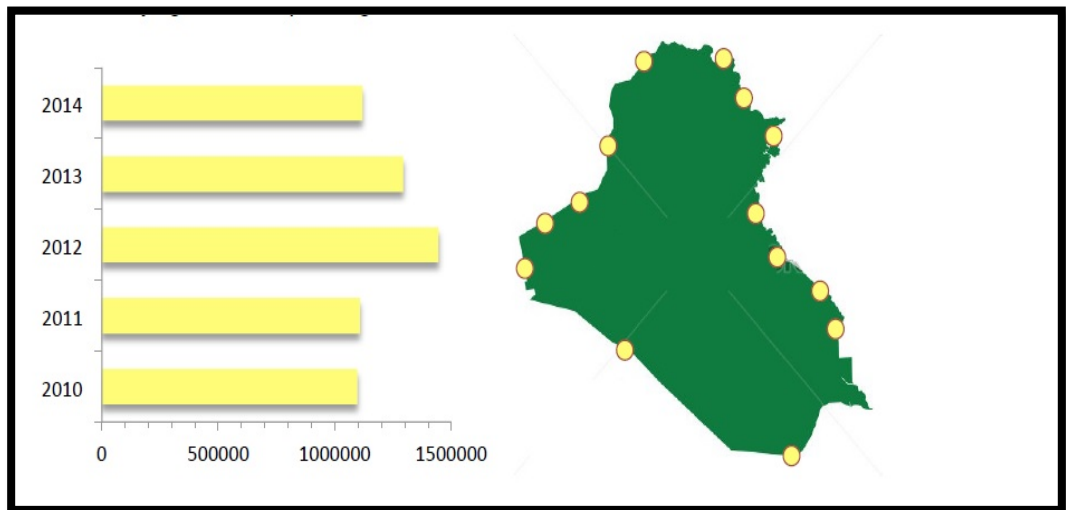
Fig. 4. Iraq import and export of goods from 2004-2014 (in billion US dollars)

Source: The Impact of Applying Rolling Highway on State Company for Land Transport in Iraq, 2016

Iraq has different border crossing points and customs offices for import and export, these are both land border crossing points with neighbouring countries and seaports linking the country with the Arab Gulf. These custom points are run by several Iraqi ministries including the Iraqi Ministry of Interior (MOI), Ministry of Finance (MOF), and Ministry of health (MOH). The country has different imported

goods which helped to be ranked as number 62 of the largest importers in the world. The imports have increased dramatically from 2004 to 2014; the imported goods include many various items such as machineries 27 %, metals 15 %, transportation 9.6 %. Iraq's main imports were from Turkey 30 %, China 18 %, South Korea 5 %, Italy 4.3 %, Germany 4.2 % and 38.5% of the goods were from Middle East Arabic countries and from other European countries. (10).

Iraq's borders were shown in Figure 4 of a total length of 3631 km divided between Iraq and neighbouring countries including the eastern border with Iran with a length of 1458 km, the southern border with Saudi Arabia and Kuwait of 1056 km, the western border with Syrian Arab republic and the Kingdom of Jordan of 786 km and finally then northern border with Turkey of a 331 km length. The land borders are encircling Iraq 98.4%, which is considered the life artery of the Iraqi economy with the other world's continents. The remaining 1.6% is the water crossing border connecting the country to the Arab Gulf through different Iraqi ports. Figure 2 describes the border crossing points of Iraq with neighbouring countries and 14 water ports. (11)



**Fig. 5.** Trucks are entering Iraq from the borders.

*Source: Statistics Department offices, 2015*

Iraq is a large country with an area of around 437,072 km<sup>2</sup>, its population according to 2007 estimated 27,449,638 million. (12) .

Regarding to theses details of the import and export trade by using the transportation environment and the elements of this transportation guide the economy of Iraq to prove that the income of the transportation help the economy and support the Iraqi government to focus and develop this sector .

The need for infrastructure of the road network maintenance and restoration had taken a lot of money, from 2004 to 2007 nearly 5,600 km of road were covered with a layer of asphalt ranging between 4-5 cm, divided into 1100 km in 2004, 1300 km in 2005, 1500 km in 2006 and 1700 km in 2007, while the estimated costs for

maintenance (Routine and Periodic) was estimated to \$ 358.31 million. The estimates and details about the maintenance of the network of Iraqi roads are given in Table (1). (13)

**Table 1. Roads - Routine Maintenance**

<b>Periodic Maintenance (4 to 5 cm overlay)</b>				
	Total Length	(4 to 5 cm overlay) US \$/km	Total 2004 - 2007	
			Km	US\$ Million
Expressway	1,061	147,000	222	32.599
Primary Roads	10,917	91,000	2,079	189.162
Secondary Roads	14,193	36,000	2,640	95.026
Village Roads	3,704	20,000	660	13.198
<b>Total</b>	<b>29,875</b>		<b>5,600</b>	<b>329.986</b>

*Source: Feghoul, Mohammed. 2003*

We can see in this table that the Iraqi government they start to invest in transportation sector to many resins the most two popular things are the amount of income from the transportation sector each year and the second resin is the war .

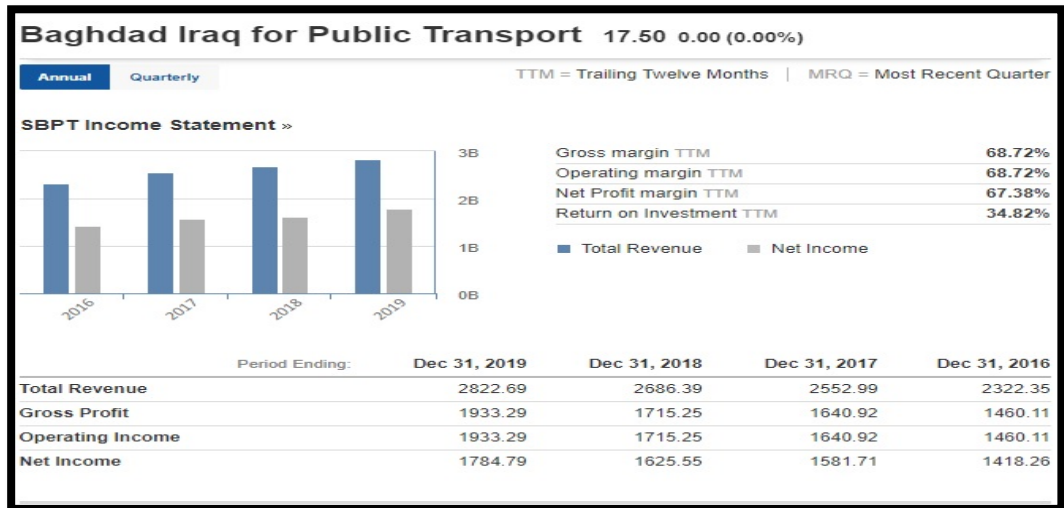
Because of the war the country was for 20 years' without establishing new roads or regular maintenance processes only for urgent matters, and without long future planning to cope with the increased transport in the country. In addition to the road's maintenance cost, there are other costs such as traffic jams among conjunctions of highway, which cost about \$ million 36 plus the road safety program with a cost of about 70 \$ million. (13)

**B. The income of transportation sector:**

The income of transportation sector in Iraq is totally different comparing with other countries for many reasons the main one is the wars which the Iraq faced before these wars were the reason to distorted the infrastructure in Iraq for many years and with all these problems that doesn't stop the investing and developing this sector even while the war time because the Iraqi government notes that the transportation sector is one of the sources of the economy , the figure (5) showing the income of this sector in the capital of Iraq as example for the income and this explain for many years from 2016-2019 considering two things , total revenue and net income estimated in dinars ( millions ) which approximately in each (100 ) million dinars equal ( 83 ) thousand dollars .

These statement only for the capital of Iraq and we can recognize the big amount who gets from this sector such as borders, railways , ports and highways which present ( 45,000km).





\*in millions of IQD

**Fig. 6.** Public transport of Iraq, Baghdad, income statement.(14)

**Source:** <https://ph.investing.com/equities/baghdad-iraq-for-public-transport-financial-summary>

## 5. Conclusions

- Regarding to the details the Iraqi government start to consider the income of this sector one of the main sources in the economy.
- the investment projects in this sector became in the vision of Iraq.
- Because the wars which the Iraq faced before like the last war that start in 2014 – 2017 make the Iraq rebuilding and develop the infrastructure specially the transportation sector.
- the transportation sector became one of the main source for the economy in Iraq and prove that has very big impact on the economy especially in the last war which make the government loos the source of oil so they decided to invest and develop this sector and this was the source which support Iraq while the three years of war.

## References

- [1] Iraq: Oil-For-Food Program (2005), Illicit Trade, and Investigations, Kenneth Katzman, Christopher M. Blanchard, June 14..
- [2] Nations Encyclopedia .Iraq – Transportation , <https://www.nationsencyclopedia.com/Asia-and-Oceania/Iraq-TRANSPORTATION.html>
- [3] <https://gisgeography.com/iraq-map/>
- [4] الصورة المستقبلية للنقل البري في المملكة، ندوة تنظمها غرفة تجارة الشرقية، 2011/10/2
- [5] <https://www.sciencedirect.com/science/article/pii/S0921800916300325>
- [6] <https://www.therecycler.com/posts/who-is-supporting-the-circular-economy>



- [7] Korhopnen J, Honkasalo A, Seppälä J. (2018), Circular Economy: The concept and its limitations. *Ecolog Econ* 143:37-46.
- [8] Jones, Vivian C. (2004), Iraq's Trade with the World: Data and Analysis. Congressional Research Service Report for Congress [Reference made 17.12.2015]. Available at <http://fas.org/man/crs/RL32025.pdf>
- [9] Ayadh Abdulhameed Al-khalidi (2016), The Impact of Applying Rolling Highway on State Company for Land Transport in Iraq.
- [10] The Observatory of Economic Complexity (2015), Iraq. [atlas.media.mit.edu](http://atlas.media.mit.edu) .
- [11] National Investment Commission (2014), Investment Map of Iraq 2014. Republic of Iraq Presidency of Council of Ministers [Reference made 17.12.2015]. Available [http://investpromo.gov.iq/nic\\_flash/refrence\\_materials/english%20investment%20Map2014.pdf](http://investpromo.gov.iq/nic_flash/refrence_materials/english%20investment%20Map2014.pdf)
- [12] Fattah, H. M., and Caso, F. (2009), A brief history of Iraq. New York, NY: Checkmar Books.
- [13] Feghoul, Mohammed (2003), Iraq -United Nations/World Bank Joint Needs Assessment: Transportation and telecommunications. Washington, DC: World Bank.
- [14] <https://ph.investing.com/equities/baghdad-iraq-for-public-transport-financial-summary>