

# Techno-Economic Growth- A Two Decadal Development Scenario in KSA

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**Abstract**—KSA, a name of the country having two most sacred and holy places for the Muslims of the whole world, furthermore a place that imports from all countries of the globe in terms of the articles associated with business and economic importance. Any development in this part of the world creates a happiness in the hearts of the Muslims because it receives the Pilgrims and visitor of the two holy places round the year. Hence its prosperity and development in the technical fields would add to the facilities provided to the visitors & pilgrims! This article encompasses an account of the development in the technical fields that has enhanced growth in the economic uplift of the country.

**Index Terms**— Sacred, Holy places, Visitors, Technical, Economic, Development.

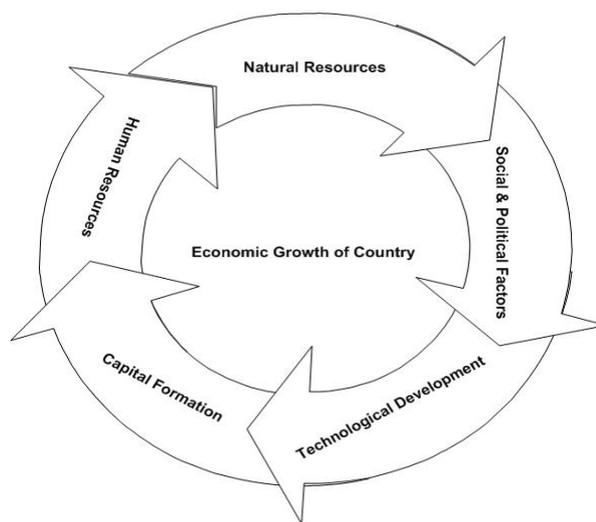


Figure1: Economic Growth Affecting Factors

## I. INTRODUCTION

Every Country of the world has her own importance in terms of Economic and strategies relationship relative to her surrounding bounds, developed or developing ones, but there are a few countries those have their importance because of the religions and spiritual environs. Saudi Arabia is the one that has the most sacred places on the earth for the Muslims of the world and that is the main reason of her importance that makes her distinct from the rest of the world.

There is always 24/7 economic activity going on because of the two holy cities, for the visitors and the pilgrims move (to & fro) in between these two places round the clock. The Economic activity produces Data, which is analyzed. Therefore Economic analysis is a systematic process that

gives a clue to the essentials of an economy, determining the scarce resources optimum use, thus choosing the best alternatives for the achievement of the set forth economic goals. Furthermore it helps in accessing the cause of various e.g. inflation, depression & economic instability like economic problems[15]. Different economic variables: demand and supply, production cost, prices, wages, labor and capital are taken into consideration for analysis purposes. Five important factors affecting the Economic growth of a country:

### A. Kingdom's Economic Offset Program

The government set up its Economic Offset Program (EOP) in 1980s. According to the offset rules & the structure guidelines[19]; that successful bidders invest the equivalent of 35% of the value of the technical components and service part of the contracts with the time line of ten years further with emphasis on high technology projects in joint ventures (JVs) that will offer high-quality technical jobs to Saudi workers, and the use of Saudi-origin products or components to be given priority, unless no such product is available, while subcontractors are also required to use Saudi-origin products in their work, Which is a clear indication to facilitate the progress of technology for the economic development. With a hope that these programs of the Economic Offset Office (EOO) [19] called offset programs could help the country like Saudia, to take the foreign contractors advantage by getting their local personnel trained along with the transfer of technology [7]. It is important for contractors to consider buying countries'

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ability to absorb different types of offsets. In Saudi Arabia’s case, this means recognizing that the defense sector in the Kingdom has reached a point where its defense industry is starting to become less internationally dependent as a result of developing local capabilities, enabling it to advance from simulation to the assembly and testing of more advanced products.

There are several examples of longstanding partnerships being formed under the offset rules that have yielded tangible results for both defense contractors and Saudi Arabia. Through this successful partnership entity, Boeing has partnered with SAGIA (Saudi Arabian General Investment Authority) and participated in education and training programs in the Kingdom. Private sector has become a lot more involved in the EOP, largely because of its expansion into civilian areas offering new opportunities for companies [27].

The transfer of technology may be attributed as the special kind offset program and the direct foreign investment [9]. Saudi Arabia & the GCC countries adopted; amongst the three offset approaches, the indirect offset approach of the offset program. The purpose being to reap the benefit from the experience of foreign contracting firms and their experts, for supporting the development effort of the economy; towards industrial diversity, investing in the fields including Defense, Services, Agriculture & Industry, ( high technical content) [14] other than the oil.

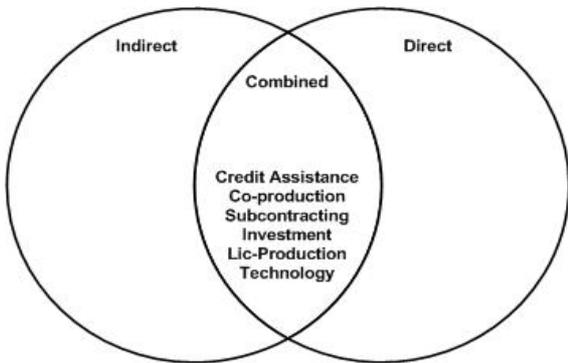


Figure 2: Categories of Offsets

As is evident from Fig.2 about various offset types, that all offset commitments are not equal, so to enhance certain commitments and for the calculation of earned credit value. Purchaser countries often use and specify “multipliers” (incentives for the sellers for tailoring their offset proposal), defined by the US Department of Commerce [22]. While reaping the underneath benefits from the offset program.

- New high value jobs opening for the highly trained and skilled Saudis.
- Attracting more foreign investment in the services & productive activities like areas.
- Local personal Development for their expertise attainment in technical, professional and managerial cadres with respect to high technology platforms.

- The Research , manufacturing processes and development understanding through Transfer of technologies utilization
- Using the materials in their crude form, availing in the Country.
- Imports substitutions as well as products for exports

II. MATERIAL & METHODOLOGY

The Economic activity produces Data, which is analyzed. Therefore Economic analysis is a systematic process that gives a clue to the essentials of an economy. The technical and Economic data from various sources like World bank[6], International Monetary Fund[25], Saudi commission for statistics for the last two decades (whatsoever was available) was taken into consideration and hence analyzed for the extraction of the hidden information in the aforementioned data.

III. RESULTS & DISCUSSION

It has always been the moto and vision of the Saudi Kings (Khadim Al-Harmain Al-Shareefan) to facilitate the Pilgrims to both the holy cities and for this purpose there has been expansion/extension, the ever first one was that of the Prophet’s (Peace & Blessings be upon him) Mosque in the year 1950 [29], then in the year 1955 was for the Holy Mosque in Makkah. This expansion work was moved further in four different stages in the reign of king Khalid since 1988[28]. King Abdullah in the year 2011 inaugurated the grand Expansion of the Haram Makkah and the High speed projects [4]. The infrastructure development/establishment in the kingdom is of the tremendous nature; King Salman has launched five projects at the grand Holy Mosque in Mecca [12].

A. Technological Development:

The advancement of technology has no bounds both in terms of its natural up and down trends in the days and the years to come [20]. Growing demand of the customers for a broader communications range i.e. data and mobile broadband services has led the Tele- communications sector of the kingdom to competition (continually seeking to invest in the infrastructure) of services [5], and that a tremendous increase in the kingdom has been noted for the internet and mobile users [11]. This is showing a number which was 51 Million, further soared to the mobile subscription 52.8 Million within just two years [17] and the 16.4 Million subscribers/ users for the internet. As essential for the sustainable development for the wide range of the country’s economic goals set forth , IT firms have heavily been attributed by the government for enhancing IT infrastructure of the Kingdom ,spending on cloud services ( rising rapidly) touched \$31.3Mn as expected in 2015[11]. In 2015 the Saudi Arabian E-Commerce market has soared up to \$ 13.3 Billion [2].

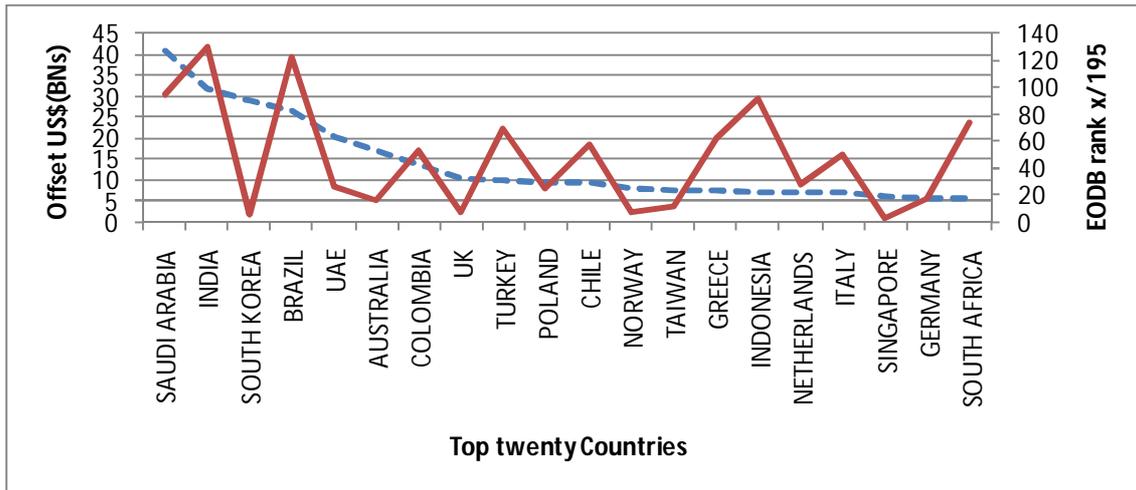


Figure 3: Offset Markets versus Ease of Doing Business (EOBD) [10]

A look at the figure above indicates that Saudi Arabia is having the highest Defence Offset Market projected with a rank of 94 out of 195 total world countries with respect to Ease of Doing Business [24]

The GDP: an indication of a Country's economy [30]. Saudi Arabia GDP, highest all-time 756.35 Billion US\$ in 2014 and a record low of 4.19 Billion US\$ in 1968, represents 1.04 % of the world economy. The averaged GDP in Saudi Arabia turns out to be 223.63 Billion US\$ from 1968 to 2016. As is obvious from the Table 1 below, on the average 7 percent of Saudi GDP comes from Hajj & Umra while 3% of it is solely from hajj [16].

Table1: Historical Statistics GDP, Hajj & Umrah

	GDP \$Billion*	Hajj+Umra \$Billion	Hajj \$Billion
Actual / Year	646.44 /2016	13.7 / 2017	4.5 / 2017
Previous / Year	654.27/ 2015	12 /2016	5.2 / 2016
Highest / Year	756.35 /2014	21.5 /2015	9.1 / 2015
Lowest / Year	4.19 / 1968	12 / 2015	4.5 / 2015
Average	223.63 **	**	***

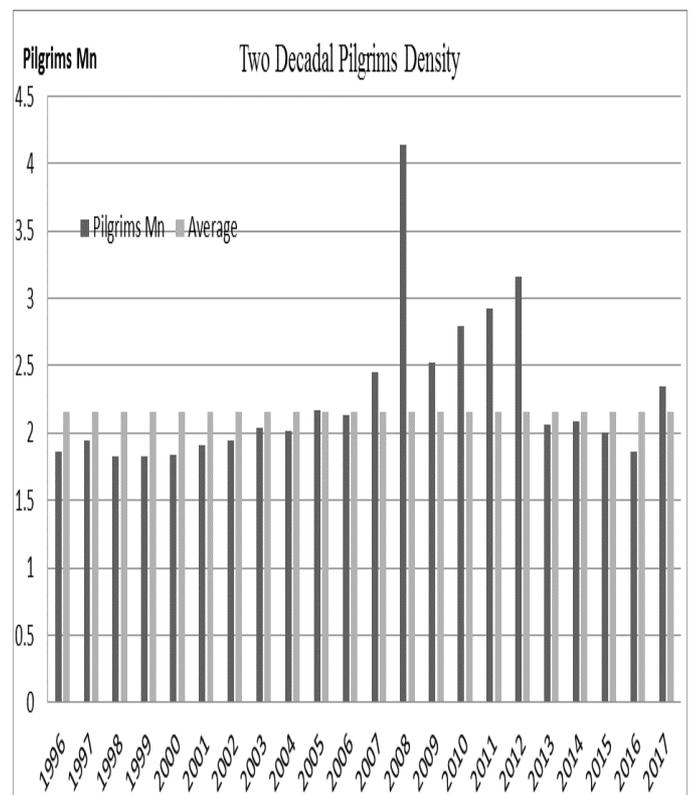
\*\$= US\$ , \*\* Average for the years 1968-2016 , \*\*\* The Average for years 2007-2016

The number of Pilgrims performing Hajj is continuously on the verge to increase each year, it used to be in thousands in the early 1920s but it has raised to millions in number since the year 1990s like 1996 has seen 1.08 Million Pilgrims. An almost 70 % growth since 1996 has been noticed in the number of pilgrims coming for Hajj (Though many more wish to perform this sacred obligation but can't because of limited visas or certain other restriction for several reasons( like infrastructure in progress or expansion of the two holy mosques etc.) by the Kingdom of Saudi Arabia [26].

2.5 Million Muslims performed Hajj in 2009; in 2013 it earned \$16.5Bn, up 10% more in comparison with the 2012 figures. The expected Hajj earning for the year 2014 was

8.5 \$Bn [1], While Mecca and Medina witnessed most of the capital influx, the benefits were also reaped by the other helping services adding to the comfort and requirements of the Visitors for their Hajj and Umra purposes[3]. While in 2016 it was curtailed to 1.83 Million [18] (Harmin extension completion phase), reaching a highest of 3.85 Million pilgrims in the year 2012 with the appropriate proportion of the pilgrims from outside the kingdom. The year 2008 has seen a historic highest number that is 2.4 million [21] from within the kingdom as can be seen from the Figure 4. It is most probably to raise in the range 12-17 million in number till 2025[30].

Figure 4: Hajj Pilgrims year wise with Average Comparison



3.2 High Speed Train

KSA has been enlarging/extending and renovating the premises of the two holy mosques since several decades but the last two decades in particular have seen a drastic change and addition of the facilities for the Pilgrims in terms of the Technology in action. This feature of technology in place has made it possible to have influx of the visitors without any hindrance in this activity with much to more facilities for the comfort of the visitors/Pilgrims.

As a part of the ritual obligation visitors (Umrah/Pilgrim) have to travel extensively, within the holy cities, of course with the harsh/ extreme climatic conditions changing cities Jeddah, Makkah & Medinah frequently, not only wasting time & exhausting them; because of heavy Jam Pack traffic along with a load on their pockets as well [13]. A contract of 7.1 Bn US\$ to improve, during Hajj season, the transport between Makkah & Medinah was awarded to Al-Shoula ( Consortium of 12 Spanish and 2 Saudi firms) by Saudi Arabia in the year 2011[23], with the worth 6.7 billion Euros for the Project with an additional work costing 150 Million Euros (160 Mn US\$). This included 35 trains with 13 cars each and having 417 seats with an optimal speed of 300 extendable to 360KM/Hr. Few stations to be opened by the end of 2017, just to start with [8], with the maintenance for 12 years, having the capability of transporting 189735 Passengers/day or roughly 67 million passengers annually. There has been a decrease in the unemployment in the years 2014 to 2015 from 5.7 to 5.6 percent of total labor force. There has been a budget deficit since the year 2014 which was 65.64 Bn SAR and 2015 having 362.23 Bn SAR while the no. of passengers has increased through all the means in the same period from 83.78 to 91.22 Million respectively, with the fast train performing its role serving at least 8 million approximately. The cost of the travel to be as follows between

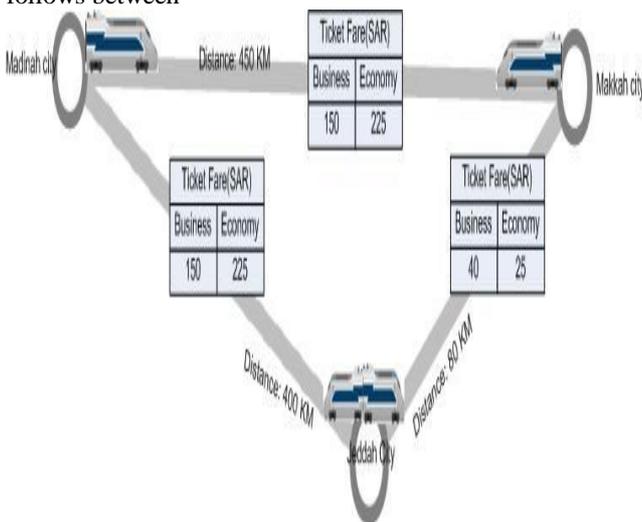


Figure-5: Train route between Makkah & Medina with class Fares

$$EA = \int^{12} PDF \text{ (SAR)}$$

Where: EA= Economic Activity Yearly

P= The number of Passengers travelling/day

D= The number of Days in Hijri Year

F= The class fare in the category either Economy or Business

Applying the above formula using the values for the specification of the trains that could accommodate (Trains 35, 13 compartments per train, 417 seats in each compartment) 1,89.735 passengers per day, i.e.

$$189,735 \times 355 \times 150 = 10.103 \text{ BN SAR (Economy fare)}$$

- 189,735 x 355 x 225 = 15.188 BN SAR (Business fare)
- Average EA = 12.645 BN SAR (3.37 BN\$) yearly

The break even for the train project would be reached in just two and a half years.

IV. RECOMMENDATIONS

Keeping the above discussion and the results in view certain recommendations have been suggested for smooth achievement of the goals set forth.

- There ought to be proper incentives for all the parties involved: including original equipment manufacturers, local partners and offset government agencies for the creation of economic uplift and commercial value attainment other than the capital being procured at the time.
- A mechanism should be devised to encourage the Ex. Patriates to invest in the country than to send the money back home.
- The Expatriate’s interest could be enhanced by following the pattern of other gulf countries e.g. by granting Nationality to maintain the interest of the Highly Qualified/Skilled Muslims to add to Economy & Human intellect (Think Tank) asset.
- It is not only that the aim of the country, to spend heavily on her defense, for the nation’s security but also be the economy that is driven by the knowledge & intellect and for this realization, the share of the foreign experts and skilled job creation is a must.

V. CONCLUSION

The above mentioned whole scenario shows that there is a lot of potential for the economic activities to grow in Saudi Arabia because of the ease of doing business and with the enforcement of 35% offset requirement, potentially \$105bn of investment in sectors such as the aerospace and automotive industries. This would likely create advanced 84,000 jobs while there is a lot of room for the new jobs by the dint of Telecommunication sector, Harmain expansion and High Speed Train full operation, in the coming years.

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