

## ***The Relationship between Energy Carriers Consumption and the Development of Economic Sector in Iran***

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### **Abstract**

*This paper tests the relationship between energy carriers consumption (petroleum, gas, electricity) and the economic sectors growth (industry, agriculture, services, transportation) in Iran by applying Hsiao causality method in a 32 period (1350-1381).*

*Results indicate that, in Iran, there is a bilateral relationship between energy carriers consumption and the economic sectors growth. In other words, increasing the consumption of energy carriers results in growth of economical sectors. On the other hand, growth of economical sectors of the country increases the consumption of energy carriers, therefore, looking forward you can see the necessity to provide the needs of the economical sectors to energy carriers.*

**Keywords:** *energy consumption, economic growth, economic sectors, Hsiao causality.*

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year 2020 amount to more than 10 million barrel of oil. One could find similar deficiencies in IEA outlooks.

The paper concludes that the forecasts in both supply and demand sides are unreliable and policy makers should be very conservative with them in order not to be misled in the process of policy making.

**Key words:** Energy, Supply, Demand, Hubbert, Reliability, Outlook.



## ***Concerns over Long Term Oil Demand and Supply Outlook***

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### **Abstract**

*Organizations like IEA, EIA, and OPEC have developed models to draw the long term pattern of energy demand and supply. Energy demand forecasts of the previous EIA and IEA outlooks proved to be overestimated. The overestimated demand for oil may encourage the oil producers to plan for further development of oil fields which may result in an excess capacity. On the other hand, the under-estimation may lead to lower production potentials which in turn bring shortages in the market. In both cases oil market suffers instability harming both consumers and produces. In the first case, excess capacity guarantees the consumers security of supply but increases the opportunity cost of oil producers. On the supply side, petroleum engineers are challenging energy economists on the issue of world oil production peak. Petroleum engineers believe that, based on Hubbert model, the oil production peak would happen very soon and the world will face a decline curve. Energy economists criticize this point of view denoting the dynamic process of oil production and price interaction. EIA oil demand forecasts shows that forecasts from 1995 to 1999 for the target year 2000 have had overestimations between 1.2 to 2.4 million barrel per day. Also the revisions of forecasts for subsequent years for the target*

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*to the unusually high crude oil prices and price differentials. This article also studies the historical price series of the crude oil benchmarks such as the US West Texas Intermediate (WTI), the European Brent and the Middle Eastern Dubai in addition to those of other major streams like the Middle Eastern Arab Heavy and the Mexican Maya. It suggests that the relative price differentials, while widen in some and narrow during other periods, are generally stationary in the long term. It is then concluded that all of the crude oil prices are co-integrated in that they can be considered as various elements of a unique pool of inter-related series all moving basically in the same direction during the course of time.*

**Keywords:** *differentials, stationarity, co-integration, downstream bottlenecks, investment*



## ***The Analysis of Oil Price Differentials and Investment Implications***

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Syyed Ahmad Reza Tayyebi Jazayeri<sup>3</sup> (Ph. D)

### **Abstract**

*The spread between light – sweet and heavy – sour crude oil prices has recently (second half of 2004) been rising to record high levels. This paper suggest that the current wider than normal oil price differentials environment provide an opportunity for investors, especially for OPEC members who generally possess untapped oil reserves, to invest in conversion units and/or in new sophisticated refineries to facilitate the processing of larger volumes of heavy–sour crude. The article first describes the crude oil quality measurement standards, namely American Petroleum Institute’s API gravity and the percentage sulfur content. It then examines the historical data to highlight the trend of the world (OPEC and non-OPEC) oil production by quality, and thereby explains some of the reasons, such as the mismatch between the supply and demand of light – sweet crude oils, behind the current wider than normal crude oil price spread. The limited spare capacity in the upstream crude oil production as well as the high capacity utilization rates in the downstream oil refining and conversion facilities throughout the world are, as well, identified as contributing factors*

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