

Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Economics



Abstract of Bachelor Thesis

Crude oil price fluctuations and their impact on economic performance - Case study of Saudi Arabia

Author: Kamil Maitah

Supervisor: Ing. Jiří Mach, Ph.D.

© 2016 CULS Prague

Summary

In many countries crude oil plays a crucial role and presents the main determinant of economic performance of these countries. Such an economy is the economy of Saudi Arabia. The main objective of this thesis is to analyze the impact of crude oil price volatility on the economic performance of Saudi Arabia. The thesis is divided into two parts. The first part is theoretical and the second part is analytical. To achieve its aims the thesis has mainly used regression analysis in order to extract meaningful statistics and other characteristics of the data. It has been found that crude oil has a dominant role in the economy of Saudi Arabia. It determines both internal economic development and its position in international economic relations. From this the advantages and vulnerabilities of the economy of this country emerge. This means that any fluctuation in price or quantity of extracted crude oil will affect the international economic position of this country and its political and socio-economic development. Saudi Arabia represents a significant country of the developing world. With regard to the high crude oil reserves and its extraction it occupies an irreplaceable place in the global economy. Crude oil also identifies its key importance in geopolitical approaches to major world political and economic forces. Given that crude oil will remain number one strategic source of energy and very important raw material for the development of the chemical industry for the foreseeable future, Saudi Arabia stands at the forefront of political and economic interests of all the major centers of the developed world.

Keywords: price volatility, crude oil, GDP, Saudi Arabia

The objectives

In many countries crude oil plays crucial role and presents the main determinant of economic performance of these countries. Such an economy is the economy of Saudi Arabia. The main objective of this thesis is to analyze the impact of crude oil price volatility on the economic performance of Saudi Arabia. The thesis will investigate the links between oil prices and various macroeconomic and financial variables of Saudi Arabia. To achieve this objective the main of macroeconomic indicators will be examined.

The Methodology

The thesis will be divided into two parts. The first part will be theoretical and the second part will be analytical. To achieve its aims the thesis will mainly use descriptive and comparative methods. Time series analysis will be conducted for analyzing time series data in order to extract meaningful statistics and other characteristics of the data. To analyze the impact of crude oil price fluctuations on the Saudi Arabian economy linear regression modelling will be conducted. In this modelling, the relationship of GDP and crude oil price will be examined. To conduct the analysis properly, the relationship of the main macroeconomic indicators will be tested. Mainly the influence of nominal GDP, inflation, current account, money supply and foreign exchange rate.

The main crude oil producers in 2013

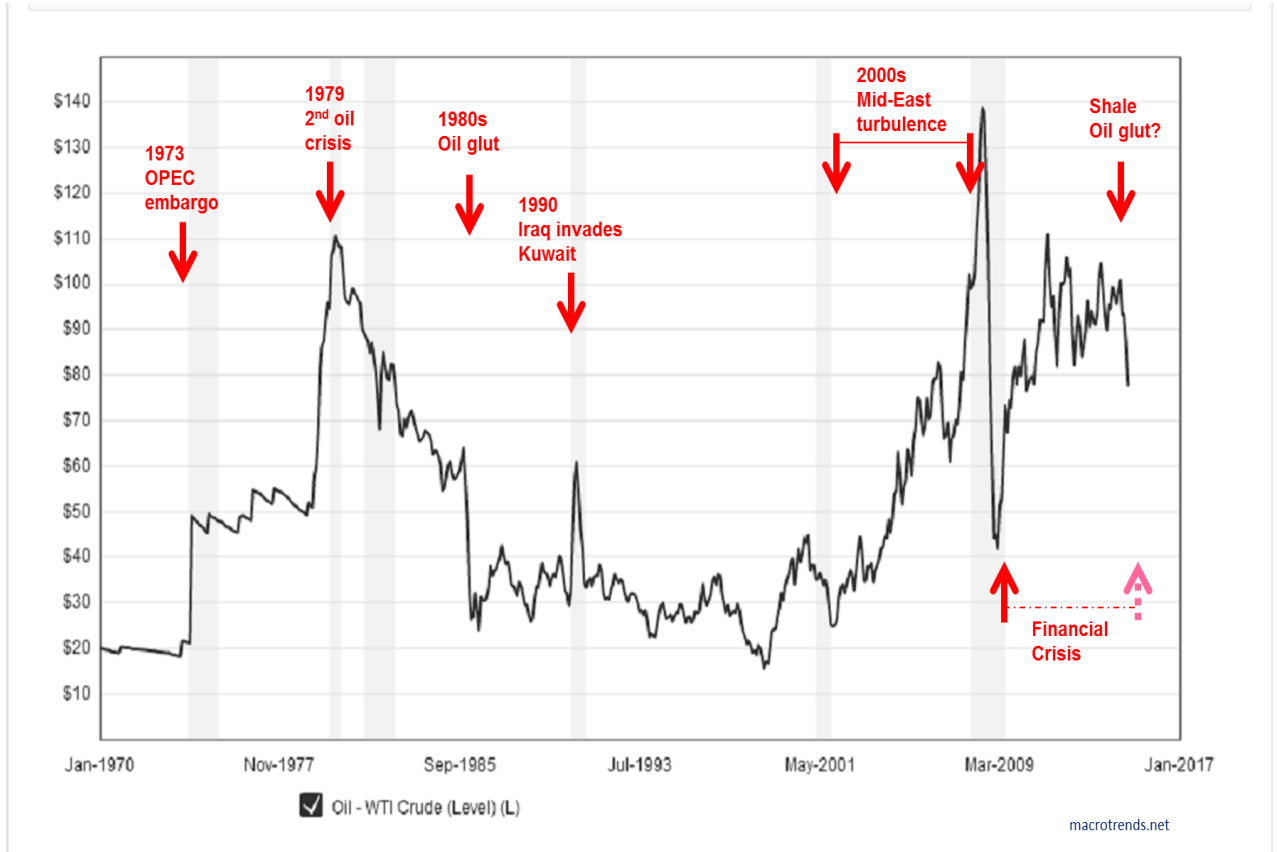
The World Top 10 Producers (*)

Crude and non conventional oil, natural gas liquids
(thousand barrels/day)

	2000	2005	2010	2012	2013
Saudi Arabia	9,348	10,893	9,972	11,663	11,566
Russia	6,527	9,636	10,456	10,728	10,877
United States	8,016	7,081	7,774	9,175	10,297
China	3,261	3,638	4,078	4,175	4,177
Canada	2,729	3,041	3,333	3,751	3,962
United Arab Emirates	2,622	2,995	2,846	3,398	3,570
Iran	3,760	4,225	4,240	3,541	3,194
Iraq	2,582	1,833	2,430	3,031	3,161
Kuwait	2,160	2,548	2,498	2,985	3,109
Mexico	3,452	3,768	2,960	2,920	2,889
The World Top 10	44,457	49,660	50,587	55,367	56,802
Rest of the World	30,748	32,512	32,898	31,574	30,540
World	75,205	82,172	83,485	86,941	87,342

Source: Eni [online]: World Oil and Gas Review. 2014. WWW: <<https://www.eni.com/world-oil-gas-review-2014/sfogliabile/O-G-2014.pdf>> p. 5

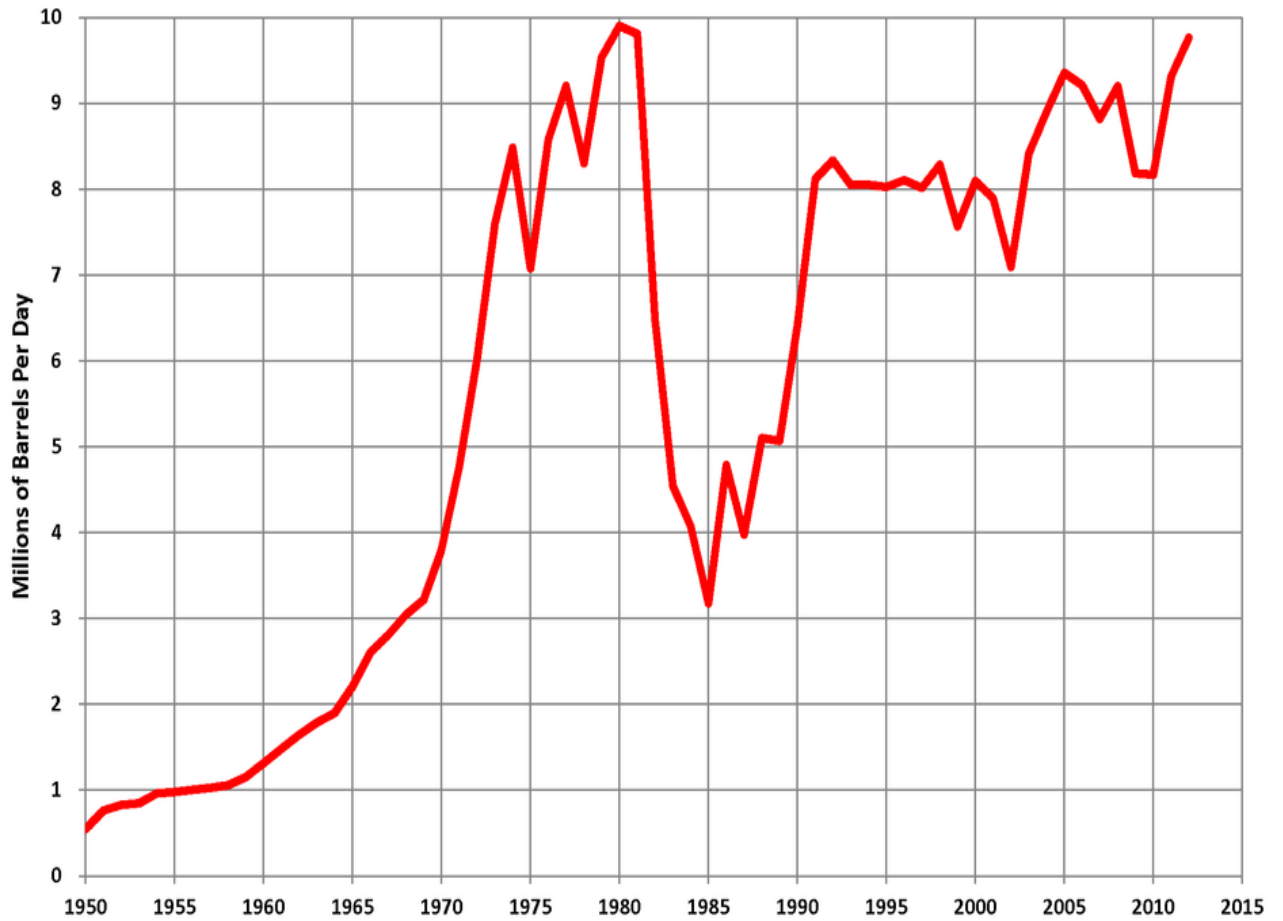
Crude oil price history 1970-2014



Crude Oil Price History Chart

Source: The k2p blog [online]: Can consumer countries fuel global growth with sharply reduced oil prices. 2014. WWW:
<<http://ktwop.com/2014/10/20/can-consumer-countries-fuel-global-growth-with-sharply-reduced-oil-prices>>

Saudi Arabia crude oil production 1950-2012



Source: Wikipedia [online]: History of the oil industry in Saudi Arabia. 2013. WWW:

<https://en.wikipedia.org/wiki/History_of_the_oil_industry_in_Saudi_Arabia>

The interdependence between crude oil prices and GDP

Multiple linear regression model No. 1

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	21.3741	56.4482	0.3787	0.7094	
OPEC basket price	0.283061	0.273902	1.0334	0.3151	
Inflation	-10.4229	2.68197	-3.8863	0.0011	***
Current account	0.78155	0.356736	2.1908	0.0419	**
Money supply	1.60394	0.786945	2.0382	0.0565	*
Exchange rate	621.612	200.327	3.1030	0.0061	***

Mean dependent var	170.0750	S.D. dependent var	20.54893
Sum squared resid	1282.788	S.E. of regression	8.441920
R-squared	0.867916	Adjusted R-squared	0.831227
F(5, 18)	23.65548	P-value(F)	2.50e-07
Log-likelihood	-81.79937	Akaike criterion	175.5987
Schwarz criterion	182.6671	Hannan-Quinn	177.4740

Conclusions

Crude oil has a dominant role in the economy of Saudi Arabia. It determines both internal economic development and its position in international economic relations. From this the advantages and vulnerabilities of the economy of this country emerge. This means that any fluctuation in price or quantity of extracted crude oil will affect the international economic position of this country and its political and socio-economic development. Saudi Arabia represents a significant country of the developing world. With regard to the high crude oil reserves and its extraction it occupies an irreplaceable place in the global economy. Crude oil also identifies its key importance in geopolitical approaches to major world political and economic forces. Given that crude oil will remain number one strategic source of energy and very important raw material for the development of the chemical industry for the foreseeable future, Saudi Arabia stand at the forefront of political and economic interests of all the major centers of the developed world.

Recently Saudi Arabia has faced huge challenges in its fiscal policy because of a sharp decrease in crude oil prices. Based on the conducted analysis I found that there is a significant correlation between the crude oil price and GDP of Saudi Arabia, if the price of crude oil increase by 1

dollar, the GDP will increase by 0.283061 billions of dollars. Furthermore that Saudi inflation and the price of crude oil are not correlated to each other. Also there is a huge correlation between Saudi Arabian current account and OPEC basket price. If the price increase by 1 dollar, the current account will increase by 0.398191 billions of dollars. As in the case of inflation, there is not correlation between Saudi money supply and OPEC basket price. OPEC basket price affects exchange rate SAR/EUR as well, if the crude oil price increase by 1 dollar, exchange rate SAR/EUR will decrease by 0.000494194.

References

1. **Václav Cílek**: “Nejistý plamen - Průvodce ropným světem.” 2007. ISBN 978-80-7363-122-2. p. 17-191
2. **C. J. R. Braithwaite, G. Rizzi, G. Darke**: “The Geometry and Petrogenesis of Dolomite Hydrocarbon Reservoirs.” 2004. ISBN 1-86239-166-1. p. 18
3. **John Husher**: “Facts & Myths Facing Today's World - Paints a realistic picture on the key topics of today.” 2008. ISBN 0595504795. p. 92
4. **Robert Mayes, James Myers**: “Quantitative Reasoning in the Context of Energy and Environment. 2014.” ISBN 978-94-6209-527-4. p. 252
5. **Sonia Shah**: “Crude - The Story of Oil. 2004.” ISBN 1583226257. p. 20-34
6. **Tushar Ghosh**: “Energy Resources and Systems - Fundamentals and Non-Renewable Resources. 2009.” ISBN 9048123828. p. 401
7. **Jeanne Mager Stellman**: “Encyclopaedia of Occupational Health and Safety.” 1998. ISBN 9221092038. p. 128