

# “Where’s my Surplus?” New Consumer-driven Realities in Oil Markets

Dr. Dalton Garis

The Petroleum Institute, PO Box 2533, Abu Dhabi, UAE  
dgaris@pi.ac.ae



## 1. Background and Summary

This presentation (and paper) argues that crude oil prices are reflecting a structural shift in world supply-demand relationships, and that the current elevated prices are not the result of just another oil price boom-bust cycle, similar to what occurred during the 1970s-1980s period. A misreading of this reality has caused a deliberately slow response to elevated crude prices on the part of the oil majors and the national oil companies, thus, exacerbating price increases from perceived and real inadequate capacity increases upstream, midstream and downstream. Coincident to this is an increase in world crude demand, especially from India, and from China, which has become the second largest oil consumer after the United States, displacing Japan to third place in 2005.

The combination of a slowed capacity increase from producers and accelerated world demand increases will lead to elevated crude price levels for the rest of the decade. There is just too much delivery infrastructure that has not been maintained for too many years, due to the long period just ended in 2003 of oil prices too low to attract needed capital. With the increased demand growth, 60% of which is coming from transitional economies in the Asia sphere, there is the long-anticipated emergence of the sub-Saharan economies with a population of 1.5 billion, which will plug in to the world energy grid in the next decade. From where will the energy for these persons be supplied?

Energy consumption is estimated to be income-elastic in transitional and developing economies such as China’s, and perhaps unitary- or even inelastic in mature economies, such as Germany’s or Japan’s. This means that for a 10% increase in Chinese GDP there is an expected greater than 10% increase in energy consumption and use. But China’s GDP growth has been over 14% annualized for 2006, consistently greater than the best estimates. This portends even greater oil demand from China. Today, China imports 6.8 mbd of the world’s crude. But at an annualized growth rate of even 9%—far less than actual—China will double its oil consumption in just 7 years. Meanwhile, as the accompanying graphs and figures show, the world oil balance has gone away, from over 6 mbd. of excess oil production capacity, to less than 1 mbd.

Thus, the danger to the industry is not the typical scenario of over-investment, leading to a general price collapse and subsequent financial stress for investors, and national and international oil companies; but rather, under-investment, which could accelerate price rises and economic dislocations.

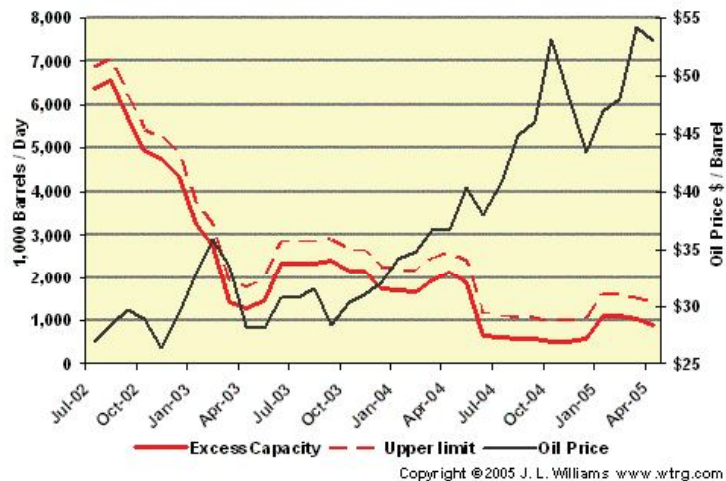


Fig. 1. Excess capacity of OPEC countries.

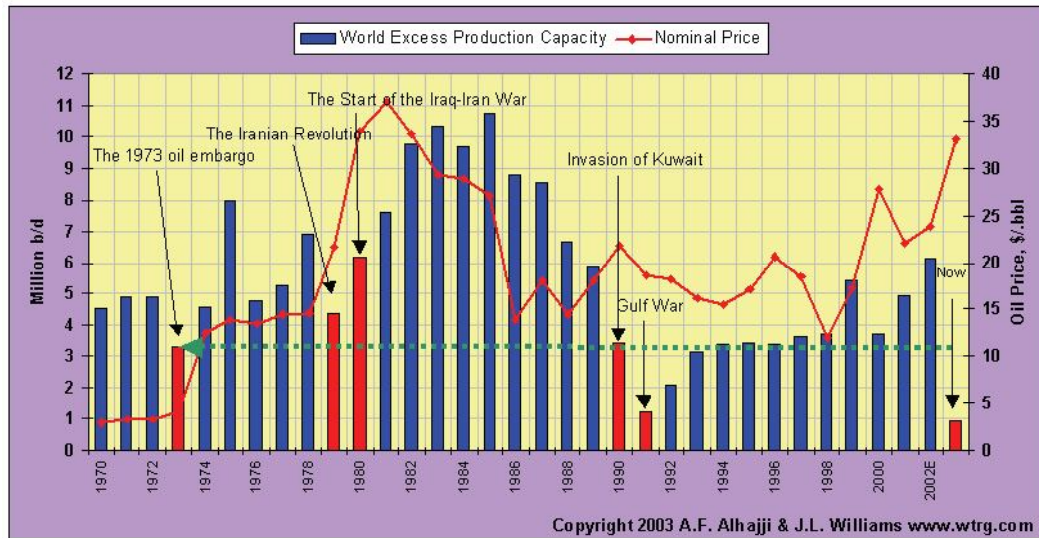


Fig. 2. World excess production capacity.

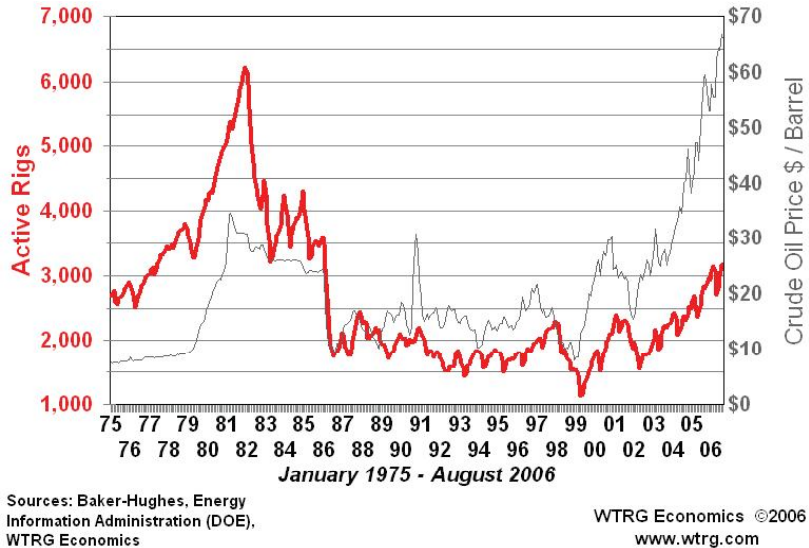


Fig. 3. World rotary rig count.

Why has the industry decided not to invest heavily to increase production capacity once prices started rising, and instead, decided to use their new profits to buy back their own stock? Because they believe that this is just another price cycle, typical in industries having capital-intensive operations which have useful production time lines of decades. What they feared is that they would invest heavily, and prices would collapse, just as they did in the 1980s, as the graph below illustrates.

The NOCs and IOCs are, in a sense, “fighting the last war,” not trusting that there has been a gross shift in world crude oil demand that could keep prices elevated for years. But the previous crude oil price collapse was due to suppliers just resuming their production, with a lot of spare production capacity to utilize. Now, however, as the above graphs show, there is little excess capacity to meet relentless demand increases and the world faces a rather tight oil supply market. That is the reason why market prices have become so news-sensitive, in spite of there not having been any evidence of actual oil shortages in the world. The rig count graph below clearly shows that even with elevated prices oil companies have been reluctant to increasing rig numbers until just recently. And still, the number of rigs is far below numbers seen in the early 1980s.

With elevated prices, it is expected that nonconventional crudes will become commercially viable in the near future; and that this will augment supplies of conventional crude. This process will only gather momentum and grow to include non fossil fuels as crude prices remain high enough to justify their large and long term investment and infrastructural support system development.



### 2. Key Features

This is a PowerPoint presentation, with an accompanying paper. Slides will guide viewers through the arguments, supporting the key assertions with logical structures and illustrations from market prices and rig counts over a 20-year period. Another set looks at downstream investments in refinery capacity, the real bottleneck in the supply chain.

It is further shown that even as rising prices induce the commercial development and production of nonconventional fuels, which augment conventional crude supplies, demand might be moving ahead faster than supply increases can keep prices from rising to levels that would make logical and commercially feasible any number of energy alternatives, along with the necessary supporting infrastructure. There would also be large income distributional effects, with some countries seeing an increase in earnings from new energy development and others losing out. The situation for the 48 sub-Saharan African states in the next decade is particularly important, and equally difficult to discern.

### 3. Conclusions

The presentation concludes that the real danger facing crude oil companies—national and international—is underinvestment, and not overinvestment in increasing production, distribution and refining capacity. Demand appears to be increasing much faster than supply, and is destined to do so for years to come, thanks to increases in world wealth from India, China and other emerging economies, and the elasticity of energy consumption for increases in GDP. And even if supply increases come online to increase the daily oil balance and surplus production capacity, the dangers from over-supply will be fleeting; while the danger from under-supply is of a protracted period of high prices that could cause market dislocations and world economic slowdowns, after which alternatives would comprise an ever larger share of total energy production.

### 4. References and Bibliography

1. WTRG Economics, P.O. Box 250, London, Arkansas 72847, USA, [www.WTRG.com](http://www.WTRG.com)
2. Wall Street Journal Commodities Futures, [www.wsj.com](http://www.wsj.com)
3. FutureSource.com, [www.FutureSource.com](http://www.FutureSource.com)
4. Organization of the Petroleum Exporting Countries, [www.OPEC.org](http://www.OPEC.org)
5. Energy Intelligence, New York, [www.energyintel.com](http://www.energyintel.com)
6. Bloomberg, New York, [www.Bloomberg.com](http://www.Bloomberg.com)

### Speaker's Biography

**Dalton Garis** is Associate Professor of Economics at the Petroleum Institute, Abu Dhabi, UAE where he teaches Petroleum Market Price Analysis and International Economics.

He earned a Bachelor of Science in Industrial Engineering and Operations Research from the University of Massachusetts, a Masters of Science in Agricultural Economics from Texas A & M University, and a Ph.D. in Applied Resource Economics from the University of Florida.

Dr. Garis has over 20 years experience in commodity price analysis and has been an invited speaker at oil and gas, refinery, and petrochemical conferences in the Gulf region presenting research on cash and futures petroleum market behavior and price formation. Dr Garis has presented research on oil prices and energy alternatives at the American Society of Mechanical Engineers annual conference in Anaheim, California, USA, and the Society of Petroleum Engineers regional conference in Bahrain. He has also acted as a consultant on the use of futures and options markets for wet barrel hedging for Gulf producers.

Dr. Garis is a columnist for *Oil and Gas News*, *ADNOC News*, *Oil & Gas Middle East*, and *Zawya* on oil pricing and marketing issues.