

Perspective in Charts

Dr Roger Bentley

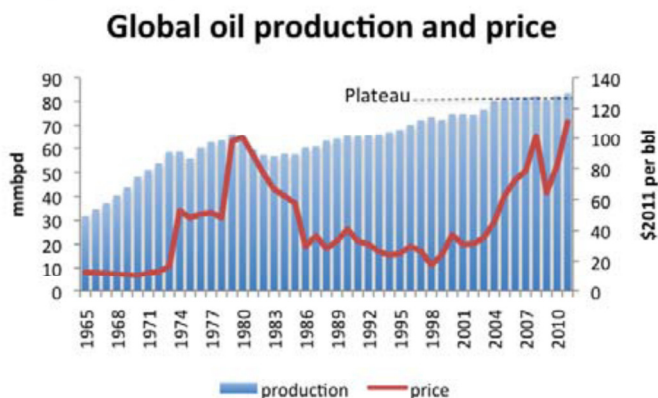


Figure 1. Oil price in real terms is back at the level of the 1970s oil shocks. This has contributed to the global recession since 2008, and the current Eurozone crisis. The high price is due to global supply tightness - global production has increased very little since 2005.

Chart by E. Mearns; data: *BP Stats. Rv.*

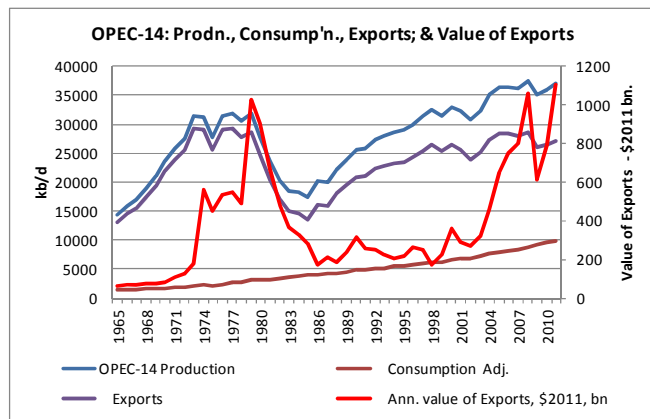


Figure 4. Production from the OPEC-14 countries, including Indonesia and Gabon, has increased slowly in recent years, but oil available for export is on-plateau due to increasing domestic consumption. (See the Chatham House study.) Real-terms cost to importers of OPEC oil exceeds \$1 trillion, as in 1979.

Data: *BP Stats. Rv.* and EIA. (Consumption adjusted slightly to make global consumption equal global production.)

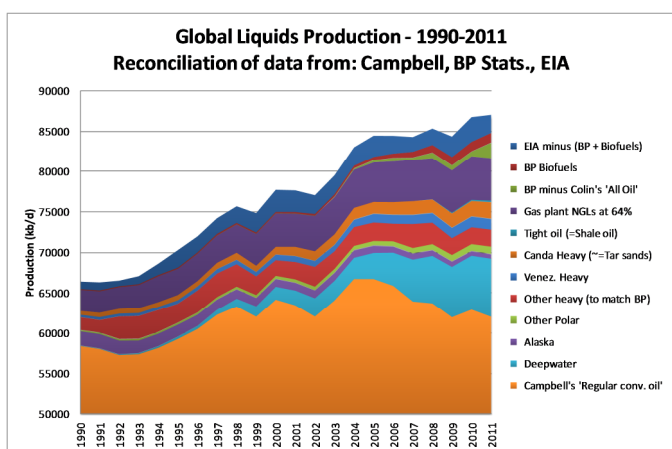


Figure 2. This examines supply tightness in more detail, plotting global 'all-liquids' production by component; and reconciling data from C. Campbell, the *BP Stats. Rv.* and US' EIA. As can be seen, total liquids production (which includes NGLs, biofuels and shale oil) is increasing slowly. But production of conventional oil plus tar sands & Venezuelan oil has been on-plateau since 2005. And Campbell's 'regular oil' (conventional oil less deepwater, polar oil and very heavy oil) has been in decline since the same date.

Chart: R. Bentley.

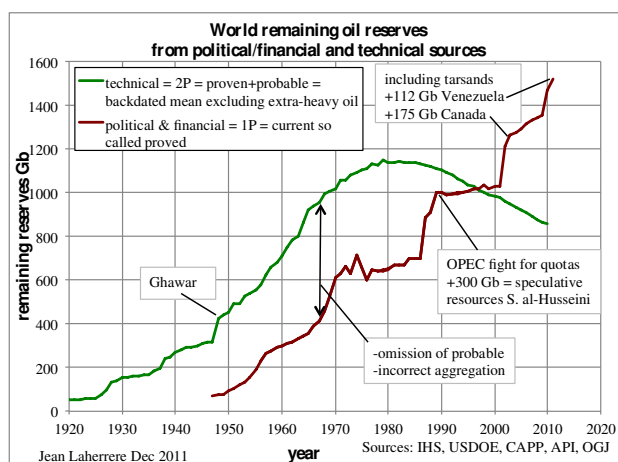


Figure 5. This chart explains why the science-based oil forecasts of the 1970s & early '80s were correct; the reason being the stark difference between public-domain proved ('IP') reserves, and the industry's proved-plus-probable ('2P') reserves. This plot by J. Laherrère shows this difference, where Laherrère titles IP reserves 'political', and 2P 'technical'. Note that the 2P reserves are *backdated*, so account must be taken of 2P reserves growth. This is a complex and not yet fully resolved topic; see R. Koppelaar's analysis on the APPGO website; and discussion in the UKERC *Global Oil Depletion* report

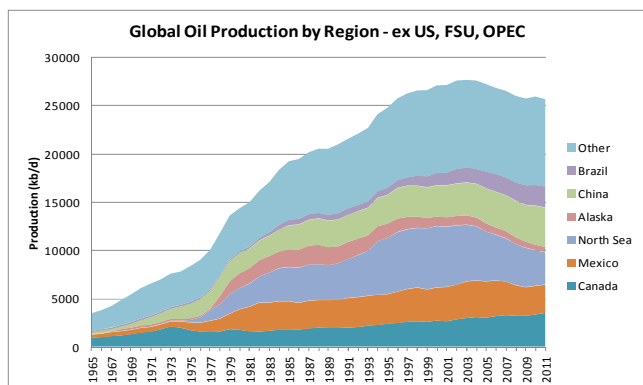


Figure 3. This further examines global supply tightness. The total of production from all regions except the US, FSU and OPEC has been in decline since 2004. It was rapidly increasing production from Mexico, the North Sea and Alaska - all discovered before the first oil shock of 1973 - that took power away from OPEC, and ended the price shocks of the 1970s. Data: *BP Stats. Rv.*

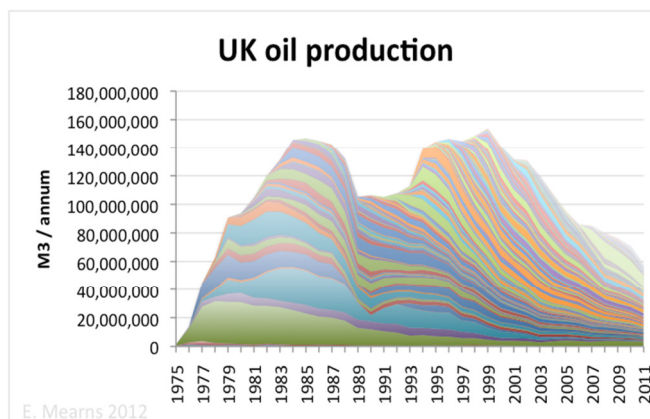


Figure 6. UK production illustrates why production in a region peaks roughly at the mid-point: All fields decline, and larger fields usually get into production first. (The 'saddle' was caused primarily by field safety work resulting from the Piper-Alpha disaster, and also the Brent gas workover.) Chart: E. Mearns.