The Gold/Oil Price Ratio

Market Prices, FAND Valuation, and CWoN Implicit Deflators

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1. Purpose

The gold/oil price ratio is among the oldest and most widely tracked cross-commodity indicators in resource economics. Expressed as barrels of crude oil per troy ounce of gold, it captures the relative real-exchange value of two foundational commodities whose price histories span distinct monetary regimes: Bretton Woods (1944–1971), the Smithsonian interregnum (1971–1973), and the post-1973 floating-rate era.

This note compares the ratio as measured by three sources: (1) market spot prices from the World Bank Commodity Markets Outlook (the Pink Sheet), extended to 1950; (2) FAND primary prices from USGS and EIA; and (3) an implicit price ratio derived from CWoN 2024 wealth deflators. The comparison reveals that CWoN's constant-dollar methodology compresses commodity price signals to the point of analytical uselessness for relative-price questions.

2. Data Sources

2.1 Market (WB Pink Sheet + Bretton Woods extension)

Gold price: London PM fix, annual average, $/troy oz (CMO column 68). Oil price: crude oil average (Brent/Dubai/WTI composite), annual average, $/bbl (CMO column 2). For 1950–1959, gold is held at the Bretton Woods parity of $35/oz; oil prices are from FAND's EIA series (posted price, $/bbl). Coverage: 1950–2025 (76 years).

2.2 FAND

Gold price: USGS-sourced annual average, stored in nc_minerals cache at USD/tonne (converted to $/troy oz via the factor 31.1035 g/oz). Oil price: EIA-sourced annual average, stored in nc_fossil_fuels cache at $/bbl. Both are global uniform prices applied to all producing countries. Coverage: 1950–2024 (75 years).

2.3 CWoN (implicit)

CWoN does not publish commodity prices. What it publishes are wealth stocks in both current USD and constant 2020 USD (for individual minerals) or constant 2019 USD (for aggregate minerals). The ratio of these series is an implicit deflator: Deflator = (Current USD / Constant USD) × 100. The ratio of gold wealth deflator to oil wealth deflator gives CWoN's embedded relative price path, which I rescale to bbl/oz by anchoring to the market ratio at 2020.

Critical limitation: CWoN oil wealth data begins at 1995. Gold wealth begins at 1973 (sparse before 1974). The overlap window is 1995–2020 (26 years). The entire Bretton Woods fixed-price era (1950–1971) and the 1970s oil shocks are invisible to CWoN.

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3. The Chart

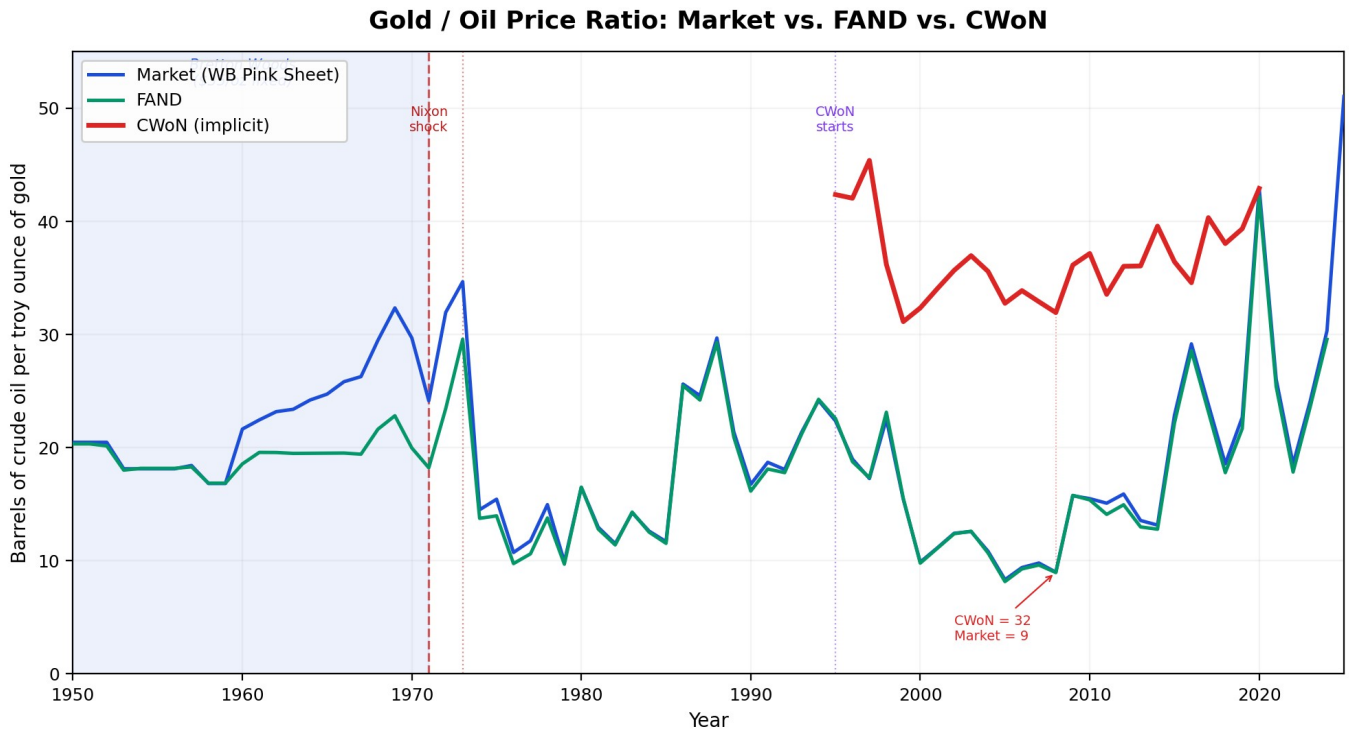


Figure 1. Gold/Oil price ratio (barrels per troy ounce), 1950–2025. Blue shading = Bretton Woods era. Red dashed = Nixon shock (1971). CWoN implicit ratio (red line) available 1995–2020 only.

4. Findings

1. **CWoN compresses the price signal.** Over 1995–2020, the market Gold/Oil ratio ranges from 9 to 43 bbl/oz (a 4.8× swing). CWoN's implicit ratio ranges from 31 to 45 (a 1.5× swing). CWoN cannot distinguish the 2008 oil supercycle (market = 9 bbl/oz) from the 2020 COVID collapse (market = 43). Both appear as roughly 32–43 in CWoN space.

2. **The compression mechanism is wealth capitalization.** CWoN's "constant dollar" deflation embeds not just price changes but also reserve-volume changes, depletion-time revisions, and discount-rate assumptions. When oil reserves are revised upward (as they were steadily from 2000–2014), the wealth stock rises even when the price falls, dampening the deflator's sensitivity to money prices.

3. **CWoN is temporally blind to the most informative period.** The Bretton Woods era (1950–1971) provides a natural experiment: gold price is administratively fixed, so the Gold/Oil ratio is purely oil-driven. This clean identification is invisible to CWoN, which starts 24 years after the gold window closed. CWoN's de facto baseline is the post-Smithsonian floating-rate world—precisely the regime where relative commodity prices are hardest to interpret without the Bretton Woods anchor.

4. **FAND tracks the market.** The FAND Gold/Oil ratio is within 1–2 bbl/oz of the Pink Sheet across the full 1950–2024 range. The small 1960s divergence reflects timing conventions (London PM fix vs. annual average). This validates FAND's price sourcing from USGS/EIA primary data.

5. **The base-year problem.** CWoN uses constant 2020 USD for individual minerals but chained 2019 USD for aggregate minerals and constant 2019 USD for branch-level wealth (coal/gas/oil). This internal inconsistency means that deflator ratios across CWoN's own hierarchy are not directly comparable without rebasing.

5. Implications for FAND

FAND's three-halo valuation (V=P×Q flow, V=P×R stock, V=capitalized rent) preserves the commodity price signal at every level. The Gold/Oil ratio in FAND is a direct quotient of observable money prices, not a derived artifact of wealth-capitalization assumptions. This is by design: FAND's 10% severance protocol and branch-specific PV multipliers operate on the stock valuation (Halo 2 and 3), not on the price itself. The price layer remains clean.

CWoN's implicit deflators remain useful as a fourth-halo cross-validation reference—they reveal what the World Bank's wealth model assumes about relative commodity prices, which is itself analytically interesting. But they should never be mistaken for, or used as a substitute for, actual market price dynamics.

Appendix: Gold/Oil Ratio Data

All values in barrels of crude oil per troy ounce of gold. CWoN Gap = CWoN implicit ratio minus Market ratio. CWoN only available 1995–2020.

Year	Market	FAND	CWoN	Gap	Gap %	Event
1950	20.5	20.3				
1955	18.1	18.2				
1960	21.6	18.6				
1965	24.7	19.5				
1970	29.7	20.0				
1971	24.1	18.2				Nixon shock
1973	34.7	29.6				Smithsonian end
1974	14.5	13.8				
1975	15.4	14.0				
1979	9.9	9.7				
1980	16.5	16.5				
1985	11.7	11.5				
1986	25.6	25.5				
1990	16.8	16.2				
1995	22.4	22.6	42.4	20.0	89%	CWoN oil wealth starts
2000	9.9	9.8	32.4	22.5	227%	
2005	8.3	8.2	32.8	24.4	293%	
2008	9.0	9.0	31.9	23.0	255%	Oil supercycle peak
2009	15.8	15.8	36.1	20.4	129%	
2010	15.5	15.4	37.2	21.7	140%	
2015	22.9	22.2	36.4	13.6	59%	
2020	42.9	42.2	42.9	0.0	0%	COVID oil collapse
2024	30.3	29.6				
2025	51.0					Gold $3,400+/oz

Sources: Market = WB Commodity Markets Outlook (Pink Sheet), annual nominal prices, updated March 2026. Pre-1960 gold = Bretton Woods parity ($35/oz). FAND = USGS (gold, nc_minerals) and EIA (oil, nc_fossil_fuels) primary prices via oconeco_tl1_global.db. CWoN = FR_WLD_2024_195 Reproducibility Package, Output/Latest: min_wealth_gold_uc_cd.dta / min_wealth_gold_uc.dta (gold wealth deflator), oil_wealth_cd.dta / oil_wealth_kd.dta (oil wealth deflator). CWoN ratio = (gold deflator / oil deflator) × market ratio at 2020 anchor.

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