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The geopolitics of trillion US$ oil & gas rents

Aviel Verbruggen*

University of Antwerp, Prinsstraat 13, BE 2000 Antwerp, Belgium

ABSTRACT

Physical oil and gas abundance, turned in market scarcity, do prices of oil and gas spike and cashed rents mount. For the years 1970-2020, the rents from crude oil and natural gas sales are expressed in US$-2020, revealing the magnitude and volatility of the money flows. Peak rents coincide with turmoil implying particular oil & gas exporting countries. Oil & gas geopolitics metamorphosed from conquering oil deposits to precluding oil & gas exports by 'hostile' nations. Such preclusions turn physical abundance in market scarcity, boosting oil & gas prices [1,2] and rents (also called royalties, windfall, super profits). Rent skimming is also a part of the 2022 Ukraine war. Climate change mitigation intensifies geopolitical efforts to curtail the exports of 'hostile' nations.

Keywords

Oil & gas abundance;
Geopolitical energy conflicts;
Fabricated market scarcity;
Climate change mitigation;
Ukraine war

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1. Introduction

During oil crises, fluctuating prices attract most media attention. The high oil price volatility, its link to political upheaval and its impact on the economics of developing and developed economies, have been observed and described by several authors [3,4]. Also is the price impact on money flows mentioned, yet proper and full quantification of the money flows left undone. Oil money flows incorporate price and quantity, and inform about the assets which really count for people and business. Price is ephemeral, cashed money is a lasting asset. And, as the maxim tells: 'Money makes the world go round'.

Firms, organizations, households, individuals decide on investments after having considered expected revenues and expenses of possible alternative projects. The considerations may imply explicit and extensive cash-flow analysis as practiced in the business world [5]. Money is also an important factor in sustainable energy planning and management, be it at the supply side [6] or at the demand side [7]. Too often is price used as a symbol of market performance, while at the same time concealing the related money flows. The EU Emissions Trading System is a salient example, deceiving politicians, the media, academics, and the public [8].

Exposing the actual money flows in their sheer size is already a difficult task. Agents fabricating the conditions to obtain huge super-profits (also called rents), conceal their practices, hence also the origin and destination of the billions of US$ implied. Natural resources created by Earth and Sun, are the bedrock of rent creation and skimming. Fossil fuels, oil and gas in particular, are natural sources generating excessive rents in a world 'addicted to oil'. "*Natural resources give rise to economic rents – revenues above the cost of extracting the resources, because they are not produced. Oil and natural gas rents are the difference between the value of crude oil and natural gas production at regional prices and total costs of production*." [9]

World Bank staff assesses the annual rents from crude oil, natural gas, and other resources. The World Bank publishes the results as percentages of the annual wealth

*Corresponding author – e-mail: aviel.verbruggen@uantwerpen.be

obtained by the world's nations. To a high degree, oil & gas business is rent capturing business. To augment rents, oil & gas supply is manipulated by oligopoly power and by cartel actions [10]. However, excessive peak rents are boosted by political-military conflicts and their sequel of societal disruption, if not civil war.

2. Trillion US$ oil rents: magnitude and volatility

World Bank's data [11] allow the estimation of crude oil and natural gas rents for the years 1970-2020 in US$-2020 constant monetary value (Figure 1). It requires two mathematical operations: multiply the percentage numbers with GDP (Gross Domestic Product) values, and inflate the historical annual rent values to the US$-2020 price level. When this is done, the annual rents can be added over the 51-year period: the sum equals 52.54 trillion US$-2020, or on average 1.03 trillion per year rents, actually being 'Profit without Effort'.

The total of 52.54 trillion is composed for 86.4% of crude oil rents and for 13.6% of natural gas rents. The preponderant share of oil rents is due to the versatility of liquid petroleum and its many derivatives on the one hand, and, on the other hand, to incomplete natural gas distribution facilities to serve end-users, in particular during the first part of the [1970-2020] period. It is expected that the gas rents will be significantly higher in the year 2022, because the sanctions and embargos on Russian natural gas exports play a prominent role in the Ukraine conflict.

The volatility of the assessed annual rents is significant: a mere 92 billion US$-2020 in 1970 and 2,620 billion US$-2020 in 2011. To comprehend the volume of annual rent money flows, compare, for example, to the annual world energy total investments [12], in 2021 being 1,531 billion US$-2019.

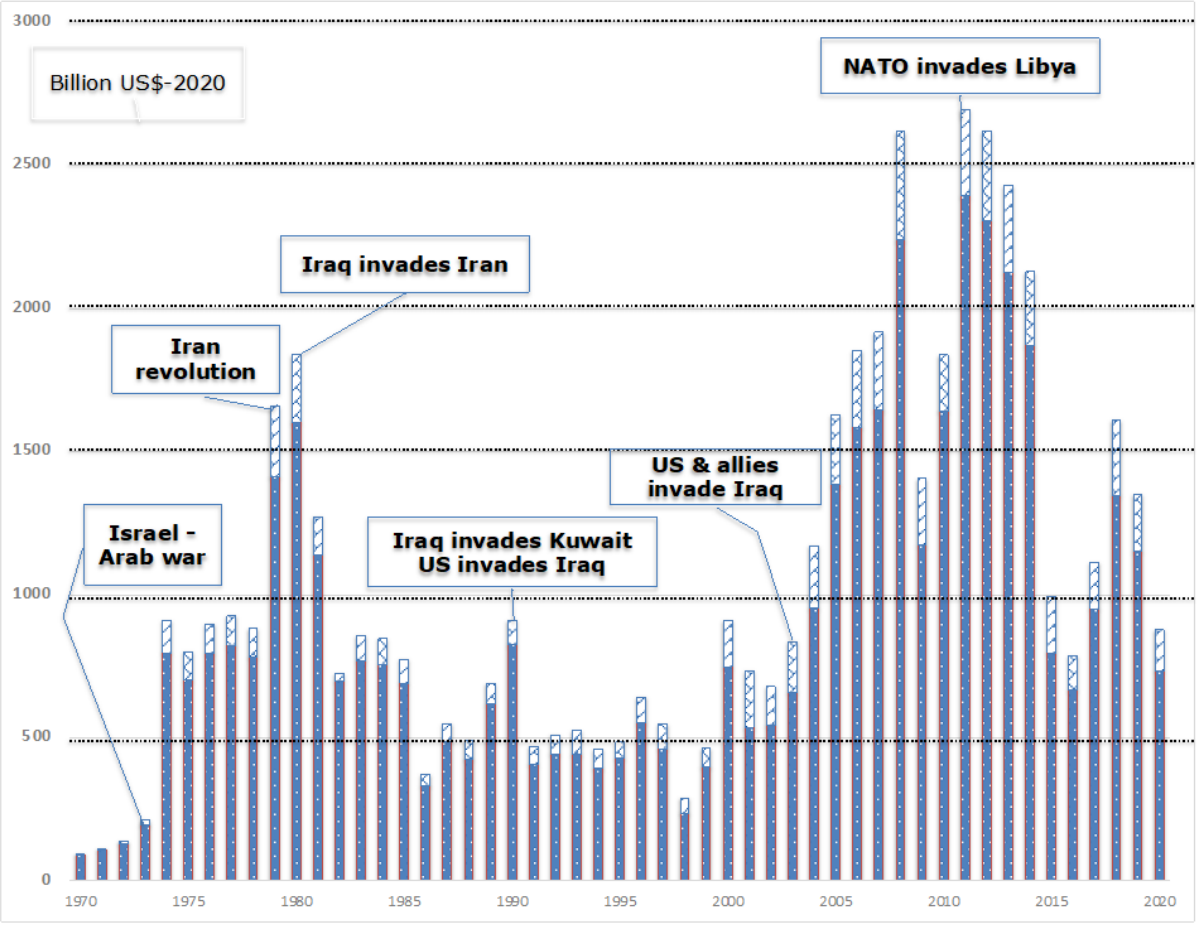

Figure 1: Oil (dark areas of the yearly stacks) & Gas (light areas on top) rents in billion US$-2020 constant price levels, for the 51-year period [1970-2020]. Source: author's calculation based on World Bank data and BP Statistical Reviews.

The horizontal axis of the graph mentions the years, starting with 1970 and ending with 2020; the years are indicated via 5-year steps. The vertical axis shows the volume of the annual rents in constant prices of the year 2020 (US$-2020). The annual gas rents are stapled upon the annual oil rents. The labels are reminding of military conflicts with significant impact on the height of the annual rent volumes. For example, the invasion of Libya in 2011 with immediately a high increase of the rents in 2011.

Data for comprehensive assessment of oil & gas rents after 2020 are not yet available. In 2022, oil prices again exceed US$ 100 per barrel [13], stirred by the Ukraine war and the embargos on Russian oil & gas exports, boosting revenues and profits from rent capturing.

Information for splitting the rents revenues of nations in shares obtained by public treasuries and by oil multinationals or oligarchs is lacking. One only can observe occasional, incomplete data, such as: Twenty-eight of the largest Western oil & gas companies publish profits of US$183.9bn over 2021, and already US$93.3bn in the first quarter of 2022 [14]. Rystad Energy [15] reveals Free Cash Flow of all publicly documented Exploration & Production companies of US$493bn in 2021 and US$719bn when downstream activities are added. If the average oil price in 2022 is US$111/barrel, Rystad expects US$834bn from Exploration & Production and US$1,100bn with downstream activities. This information is partial, but announces total rents will again spike in 2022.

3. Explicate magnitude and volatility of oil & gas rents

Since 1973, oil prices have been volatile by unpredictable combinations of market fundamentals and speculation [16]. Oil supply encompasses exploration, winning, processing, and delivery for serving end-users. Disruptions in supply chains cause price hikes. Disruptions in demand for oil may cause price falls, like happened in 1998 (Asian economic crisis), 2008 (global financial crisis) and 2020 (COVID crisis).

The abundant oil & gas reserves on Earth can meet a large demand at low prices. Low prices, however, mean omitting payment for the significant external costs caused by oil & gas use, for example as environmental damage, and as irreversible climate change mainly due to the combustion of fossil fuels. Public economics advices levies on the negative externalities and subsidies for positive externalities. For the CO_2 and other emissions of fossil fuel combustion processes, applying environmental and climate economics would entail progressing higher levies on oil & gas use, installing stable, affordable price patterns for end-users. Levies (which revenues are public rents) may compensate external costs and support technological innovation or other merit goods. However, the public economics' advice is poorly followed, which offers room for private firms to cash the rents on oil & gas uses [17]. IMF [18] shows that fossil fuels are heavily subsidized.

Low oil & gas prices also mean moderate rent capturing on these natural resources. Yet, oil & gas market functioning is influenced by cartels like OPEC. By regulating its members' supply quota, OPEC aims to maximize captured rents over time. Such precarious regulations are more effective when trust among cartel members is high and robust. In 1960, Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela founded OPEC. Since that date, Iraq invaded Iran and Kuwait, and serious animosity between Iran and Saudi Arabia is protracting. Nonetheless, OPEC/OPEC$^+$ avoid mutual destruction of the members' oil & gas business, while obtaining sizeable rents (Figure 2), what could be called the baseload of the rents '*load curve*' (Figure 1).

Speculation is a general term for explaining high spikes in rent capturing. A cocktail of context factors need consideration, like climate change, technological advance, and mainly geopolitics. By the 1973 oil price crisis, *oil depletion* became a focal topic, anchoring beliefs in oil-related conflicts emerging for acquiring the dwindling oil deposits on earth. More militarized conflicts or '*resource wars*' were expected [19]. The Rio World Summit (1992) adopted the UNFCCC, for avoiding dangerous global warming. Energy use causes 76% of the greenhouse gas emissions [20]. Climate change mitigation means abandoning fossil fuels to escape climate collapse [21,22]. Building energy systems driven by electricity tapped from ambient energy currents (light, wind, water, geothermal) has become sound economics [23]. Giving up fossil fuel winning and use is the greater challenge, unsettling oil & gas geopolitics.

4. Oil & gas geopolitics in light of contracting business

Abundance of fossil fuel resources dissipates discourses on *'depletion'* and *'peak-oil supply'*. Growing probability of irreversible climate collapse requests urgent and

drastic reductions in using fossil fuels. In a necessarily decaying industry, competition for market share intensifies. Characterization of the coincidences between military conflicts and excessive rents alters over the 1970-2020 period. Up to the 1990s conflicts seem mainly politically driven, with control over oil & gas resources on the back-seat. After 1992, climate change mitigation and the projection of reductions in fossil fuel use, changed the conflicts' content and aim. Sanctions, embargos, invasions, instigated civil wars, aim at precluding the sales by '*hostile*' oil & gas exporting nations. Conflicts are most severe in Middle Eastern and African countries, also spreading to South America and Russia.

The political context is sketched here, the economic rationale in the next section.

Disintegration of the USSR after 1989 expanded the superpower position of the US. It marked the triumph of neoliberalism, pushing economic growth with transnational corporations leading in economic globalization, helped by subservient politics. "*A globalizing power wants military bases abroad, trading partners, markets, and consumers: suzerainty, not an old-fashioned empire*" [24].

The US economy is built on opulent use of fossil fuels. Since the 1970s, it pursued '*energy independence*' by reducing oil imports. In 2016, D. Trump launched '*American energy dominance*', stimulated by the US domestic shale revolution [25]. In 2020, the US produced ca. 50% more oil than Saudi Arabia and Russia. President Trump coerced Germany to dump Nord Stream 2, supported by a vote of 98% of the US Senators (June 15, 2017) imposing new sanctions on Russia [26].

Acting as Superpower, the US engages NATO allies, and maintains friendly links with the Gulf Cooperation Council among six Arab Gulf states (founded in 1981). This US-led alliance faces a dispersed array of other oil & gas exporting nations: many allow Western oil companies to exploit their resources in diverse degrees of joint-venture[a]; some nations insist and keep a majority share in joint-ventures, or nationalize their oil assets, excluding foreign capital. The US typifies such nations as '*hostile*', like Iran, Venezuela, Russia, and Iraq, Libya before they were invaded. Sanctions, embargos, and conflicts aim at paralyzing hostile oil exports, not at conquering resources. Covert warfare and instigated civil wars are tactics to exhaust hostile opponents.

5. The economic rationale of curtailing oil supply

Figures 2 and 3 are graphs of a market (supply and demand) situation as commonly used in economics textbooks and journal articles. They show a one-day snapshot of global crude oil business in a market format. Manufacturing crude oil, done by sun and earth million years ago, has zero cost. In large fields, winning oil at US$10/barrel + additional processing makes the expense around US$20/barrel. US shale oil is more expensive in a range around US$60/barrel. The mentioned prices are approximative to the real numbers; the graphs intend to show what rent capturing means and how spiky rent capturing is constructed by precluding a significant share of cheap-to-win oil and gas sources from the world market, which is ruled by daily notations in US dollars. The calculation of the actual historic rents (Figure 1) is not based on the Figure 2 and Figure 3 numbers, rather the reverse is true: the numbers are chosen for didactic considerations, but not pointless.

Without curtailing access to the world oil market for '*hostile'* oil supplies, a competitive price would fluctuate around US$20/barrel. Since the 1970s, OPEC's intervention pushes prices upwards. Let us say by searching prices in the region of US$80/barrel, but often failing to reach that level. For the didactic explanation in figure 2, the US$65 crude oil price in 2019 and the US$42 price in 2020 are used [27]. The frail power of OPEC limits its rent capturing capability.

The horizontal axis mentions the quantity of barrels in million barrels/day (a one-day market is shown). The up to 100 million barrels/day delivery capacity is shouldered together by all producers in the market. The basic supply curve is the horizontal line at $20, however pushed up to the above $40 height by OPEC/OPEC$^+$ commitments for together reducing production via quota assignments. The vertical axis shows prices (=$/barrel). Hence, a unit area in the first quadrant has $ as unit (barrel * $/barrel = $). Area under the $20 horizontal is cost coverage (including return on invested capital). The area between the $20 and $42, viz. $65 horizontals are rents (super-profits). The rents areas are shown for two cases: the low case is when OPEC/OPEC$^+$ performs poorly ($42 price); the high case when they perform good, however not superior ($65).

For excessive rents, oil & gas reserves in abundance must be truncated to create delivery scarcity. So doing,

[a]For example: Oil Change International (October 2021) reports that only a third of the African projected new gas production volumes were African-owned. Multinationals like Total, Eni and ExxonMobil tend to fly in their own workforces and reap the profits.

the market fundamentals of supply are reshaped. The US-allies do this successfully by sanctions, embargos, instigated conflicts, sometimes invasions. Figure 3 (in the same format as Figure 2) is the case where the supply of hostile sources is significantly truncated.

The exclusion of hostile supplies has three effects. First, on the US$20/barrel horizontal supply a panhandle supply curve is fabricated, cutting the short-run inelastic [28] demand curve at a high price level (beyond US$100/barrel). For example, in the year 2011, the crude oil price stood at 128 US$-2020/barrel. Second, the bulk of the rents occasioned by the high selling price, land mainly to the US-allies, the transnational oil companies, and friendly oil-exporting nations. Also, hostile nations (Russia, Venezuela, …) profit from oil price hikes, however their share in sold quantities is truncated by sanctions, embargos, war or internal turmoil. By exclusion from the US$ trade area, the hostile nations tend to sell oil and gas at (far) lower prices to nations that are less subservient to US politics (like India, China, …). Third, by stifled competition the US can export its shale oil & gas to Europe, notwithstanding the higher prices and higher carbon emissions than natural gas imported from Russia. By explosions at the Nord Stream 1 and 2 pipelines (September 26, 2022), the dash for LNG imports provides more market opportunities for LNG activities, mainly controlled by US allies, in particular the oil & gas multinational companies.

Most of the oil & gas rent bills are charged on European and Far Eastern energy users, driving internal combustion engine cars or living in poorly insulated dwellings. Their industrial activities using intensely fossil fuels, lose competitive advantage. Excessive rent bills extort their economies and finances, causing inflation and economic recession, if not crisis. Poor people in the wealthy EU cannot afford the inflated oil, gas, and electricity bills. By the high energy (oil, gas, and electricity in suit) bills, the financial positions of a large share of European households, small companies,

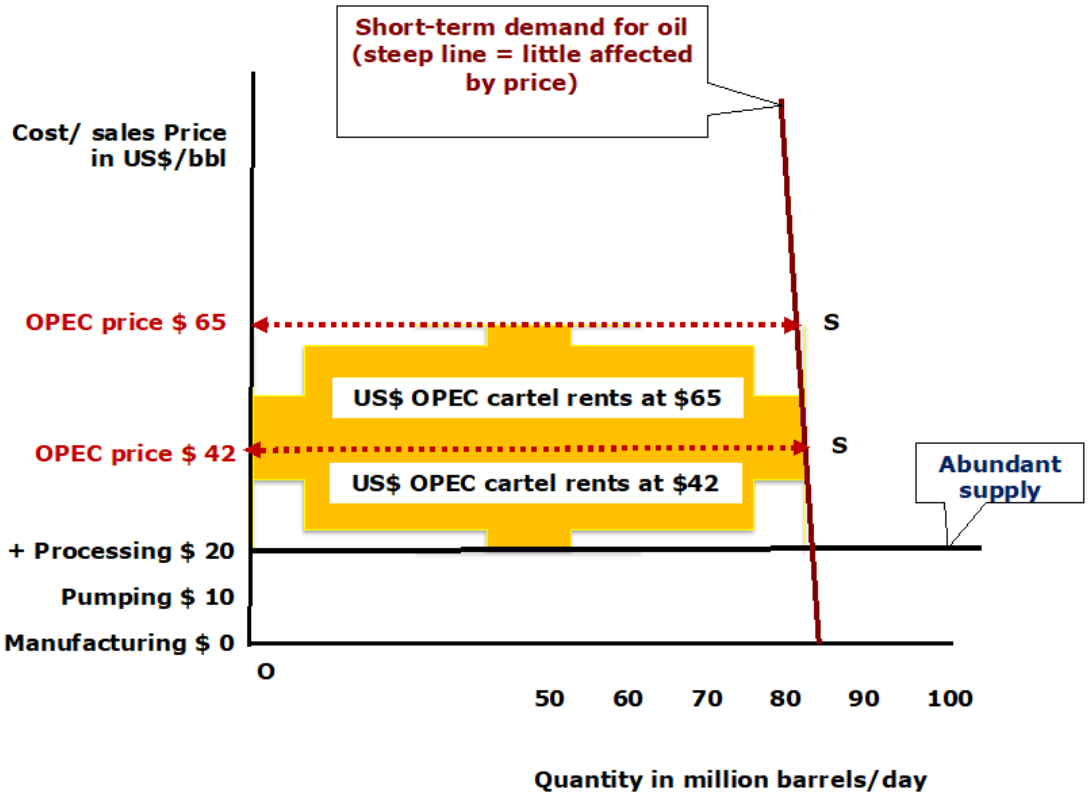

Figure 2: One day crude oil market WITHOUT sanctions & embargo's: all nations are allowed to export. By the OPEC/OPEC + cartels all exporters share in the super-profits.

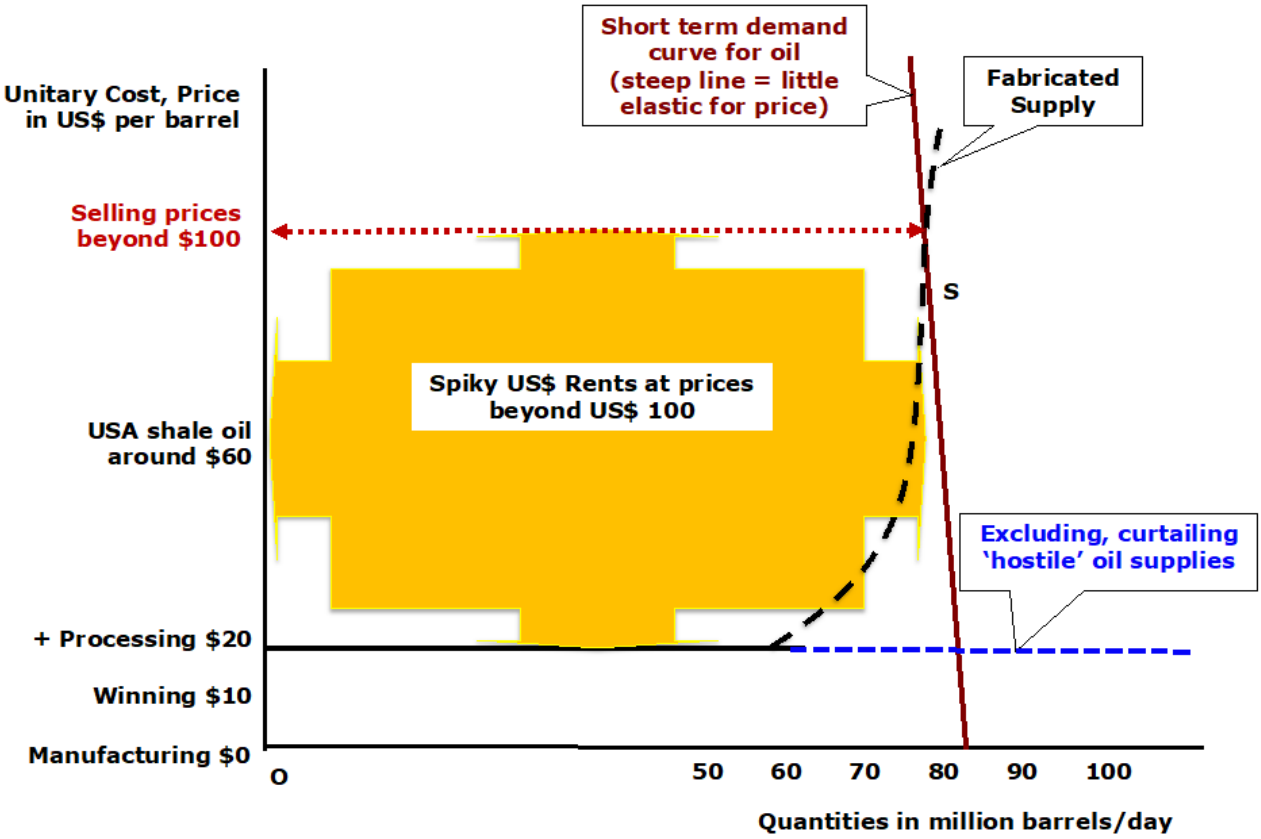

Figure 3: One day crude oil market WITH sanctions & embargo's: hostile nations' export is largely excluded. Rents, oligopoly profits by geopolitical power via rearranging market basics

national states, and more, are fully disrupted. The care for next winter survival is impairing investments in distributed renewable power supplies, the core of the low-carbon energy system to be deployed.

6. Ukraine war

Geopolitics of exerting political-military power implies also political-economy interests. For example, the Ukraine war with immense personal and economic outfall, most for the people directly involved, also for the rest of the world [29]. Billion to trillion US$ in rents are cashed by transnational energy companies, which they can use to transit to low-carbon neoliberalist regimes. Such regimes are characterized by three attributes [30]: 1. Multinational corporates dominate the agenda and politics in case of strategic decisions; 2. Economic growth is pursued, making the super-rich richer; 3. Poverty is normal, and needs only charity to alleviate.

The ongoing rent skimming on energy supplies accepts deep inequalities between winners and losers, and is quelling peoples' financial resources to deploy more renewable energy and efficiency projects. Money for investing in such projects is stripped from energy users, mainly by paying the rent bills and by diverting public funds to military spending. The military activities are exhausting significant volumes greenhouse gases, however not affecting the UNFCCC statistics, because the military is freed from reporting their emissions.

In the perspective of conflicts for excluding '*hostile*' oil & gas supplies from the world market, Russia is the final nation with abundant resources to boycott. A positive insight, however choked by the

likely protraction of the conflict during many years. The fossil fuel business knows that their activities must shrink for succeeding in climate change mitigation. The more their sales of fossil fuels have to be reduced, the stronger they strive for excessive pricing of the last billion ton-oil-equivalents they may be able to sell.

7. A brief wrap-up

The main point of the paper is to reveal the oil & gas rents in clear money terms. This is the first time the detailed World Bank statistics have been shown in constant US$-2020, i.e., in the price level of the year 2020 (the last year of available statistics). The press, the academic world, and activists found this revelation of information astonishing and interesting[b]. It strengthened the attention for super-profits in the climate policy discussion [31].

Since 1973, oil & gas rents (super-profits obtained without effort) have been an important objective of the major supply-side players in the business, the oil & gas exporting nations and the multinational companies like Exxon, Chevron, BP, Shell, Total, and more. Seen from their side, they have been successful in extracting on average 1030 billion US$-2020 per year over the 51-year period [1970-2020]. OPEC/ OPEC^{+} nations want planned rent skimming over the long-term. Huge rent spikes coincide with sanctions, embargos, invasions, civil wars in what the US labels as rogue states, 'hostile' nations. By precluding access for the hostile nations to the US-dollar based oil & gas exchanges, the fundamentals of oil & gas supply are changed: physical abundance is turned in market scarcity.

The subject brought up here is not exhausted for theoretical and practical analysis, study and publishing. This contribution wants to limit the spotlight on the huge rent skimming problem.

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[b] It is important to reveal full information, verified by trustworthy public authorities, about the money flows and money assets in all systems with high impact on the public interest. Another example in dire need of money transparency is the EU Emissions Trading System (see Reference 8).

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