THE RIGHT APPROACH TO RUSSIAN OIL SANCTIONS

PREPARED BY PRINCETON ENERGY ADVISORS

MAY 6, 2022

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Russian Oil Sanctions

- Russian oil sanctions, as currently discussed in policy circles, seek to prevent Russia from exporting its crude oil and refined products to its customers, notably in Europe, India and China
  - As currently construed, sanctions imply an embargo on Russia oil
- This approach will fail to achieve its own goals
  - Political realities may prevent the full, or even partial, implementation of sanctions
  - As we discuss in this presentation, sanctions
    - would cause a global recession if even partially implemented
    - may not materially deprive Russia of oil revenues due to high oil prices
    - would be difficult to enforce because out-sized profits will create a black market in Russian oil
    - will eventually force the US and NATO to sanction ostensibly neutral countries like India and China, thereby alienating them, and
    - will provide no source of funds to rebuild Ukraine
- The right approach would seek to maintain customary Russian oil and product exports, but divert approximately half of Russia's oil revenues into a 'Compensation Fund' to
  - pay for Ukraine's defense and war requirements
  - sustain Ukraine's economy and support its people during the war
  - pay for damages caused by Russia to Ukrainian citizens
  - pay for refugee costs
  - pay for rebuilding Ukraine
  - compensate those countries providing financial, military or other support to Ukraine during the conflict.

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Understanding the Russian Oil Business

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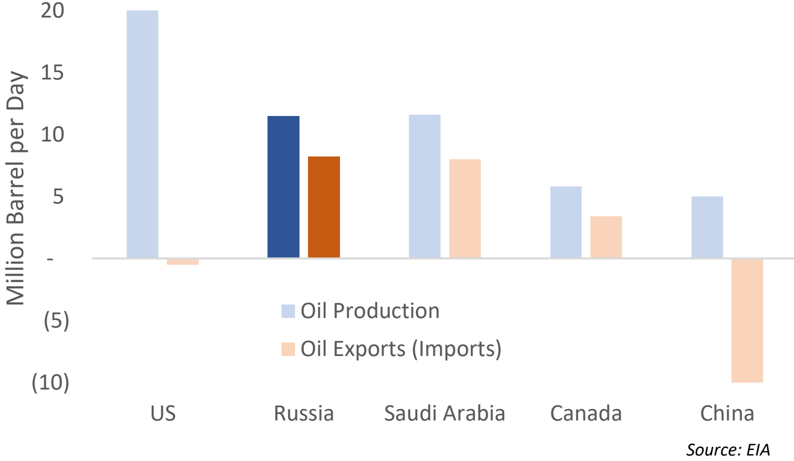
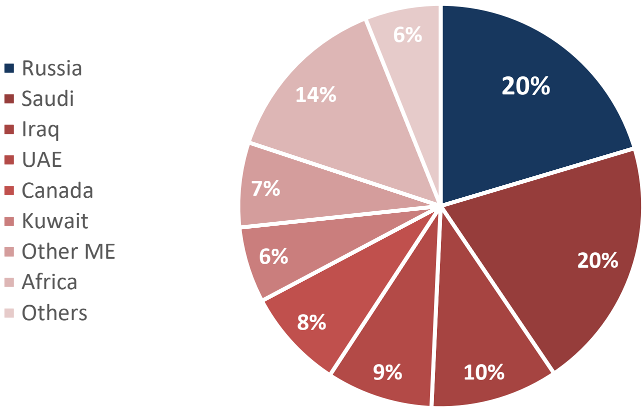
Russian Oil in Context

- Russia produces 12% of the world's oil production of 100 million barrels per day (mbpd)
- Russia is the world's third largest oil producer at 11.5 mbpd
  - This is essentially tied with Saudi Arabia, but well short of US production of approximately 20 mbpd
- In peacetime, Russia is the world's largest oil exporter at 8.2 mbpd
  - Of this, 5.5 mbpd is crude oil and 2.7 mbpd is refined products like gasoline and diesel
  - Russia provides 20% of global oil and product exports, again essentially tied with Saudi Arabia
- Both Russian oil production and oil exports are vital to the global economy





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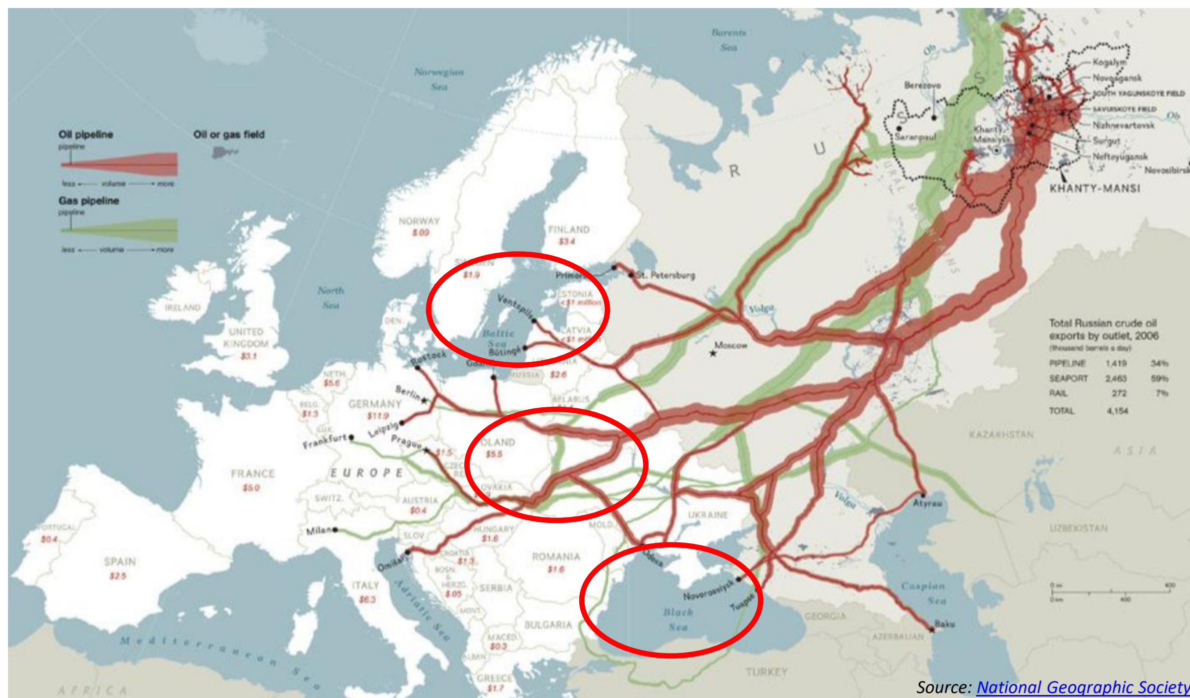
Russian Oil Producing Basins

Oil Production by Basin in Russia

Source: US EIA.

- More than 80% of Russia's oil production originates in the Urals, the Northwest Arctic or West Siberia.
- These oil fields are, by geography and history, oriented towards the west

Russian Oil Flows



Source: [National Geographic Society](#).

- The Russian pipeline system largely follows the historical east-to-west flow from Russia's key oil fields in the Urals and Western Siberia to Europe, with limited capacity towards Asia.
- Western pipeline flows terminate in NATO-controlled regions and countries
  - The Baltic Sea
  - The Bosporus strait in Turkey
  - By pipeline to NATO countries in Central and Western Europe
- [On paper](#), Russia could ship additional oil from Arctic ports to Asia, but the incumbent fleet of tankers is inadequate for these purposes, not to mention the logistics associated with rerouting pipeline flows.
- Russia has little choice but to export most of its oil to and through NATO countries

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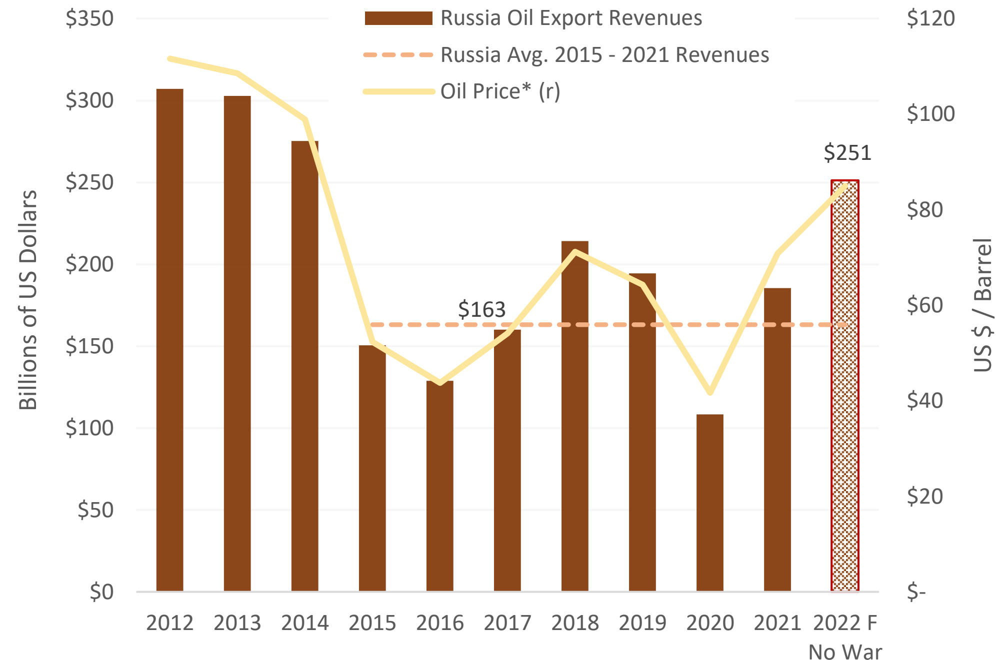
Russian Oil Export Revenues – Pre-War

- Russia's oil export revenues vary directly with the world price of oil.
- From 2011-2014, prior to the shale revolution, the Brent oil price averaged $110 / barrel
  - This brought Russia about $300 bn / year in crude and refined product exports. Times were good.
- US shales cratered the oil price in mid-2014, and Russia's oil revenues fell with it
  - From 2015-2021, the Brent oil price averaged $57, little more than half the level before the US shale revolution
  - During this time, Russian crude and product export revenues averaged about $160 bn / year.
- With the recovery from the pandemic, oil prices had risen to $85 / barrel on a Brent basis
  - Without the war, Russia would have banked perhaps $250 bn in crude and product exports revenues in 2022*, $70 bn more than in 2021 and nearly $100 bn more than the 2015-2021 average



Source: EIA, BP Statistical Review, Prienga analysis and forecasts

* *Using the EIA's price forecast from January 2022, in the absence of war, Russia would have expected to see $210 bn in 2022 oil export revenues with Brent averaging $75 / barrel. Prices were showing a distinct rising trend prior to the war, and with high inflation and a robust global economy, we believe a Brent price of $85 / barrel for 2022 would have been more probable in the absence of the Ukraine war. Our forecast reflects these higher oil price expectations.*

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The Current State of Russian Oil Production and Exports

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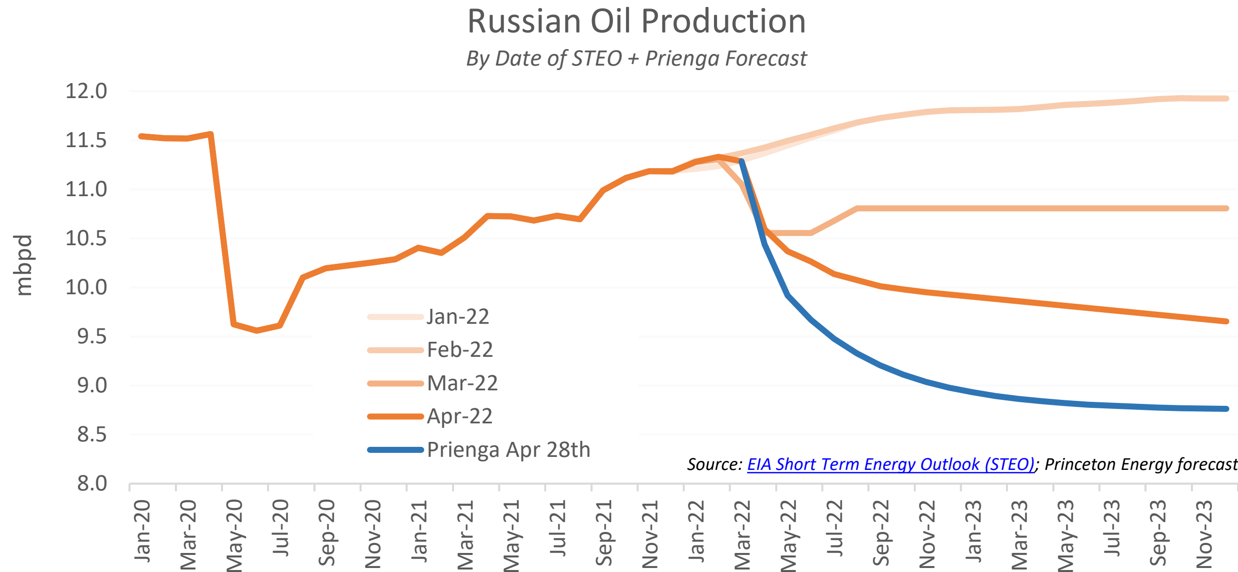
Russia Crude Oil Supply



- After plummeting 2 mbpd during the pandemic, Russian oil production had recently been recovering to near normal levels. The EIA expected Russian oil output to reach a record 11.8 mbpd next year
- The war reversed this trend, although Russian production was down only 50,000 bpd in March
- Since then, production declines have accelerated
  - In its April STEO, the EIA sees Russian production falling almost 2 mbpd to about 9.6 mbpd, the level of the pandemic trough
  - Recent press reports suggests Russian output is falling faster, down about 1 mbpd to late April
- Our forecast sees a more rapid short-term decline, with output trending towards 8.8 mbpd, 2.5 mbpd below recent levels
  - The ‘soft sanctions’ on Russia are unprecedented and therefore neither the pace nor terminal value can be estimated with confidence, but the decline looks greater than initially anticipated

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Russia Crude Oil Prices

- The North Sea Brent oil price typically serves as a proxy for global oil prices
- Russian oil exports are usually priced on a Urals basis
- Under ordinary conditions, the Urals price is about US $1.50 / barrel less than Brent
- The de facto sanctions on Russian oil exports have widened the Urals discount to an eye-popping $36 / barrel as of May 4th
- At the time of writing, the Brent oil price was $113 / barrel, implying a Urals price of $77 / barrel, still a high price for Russia by the standards of the last five years

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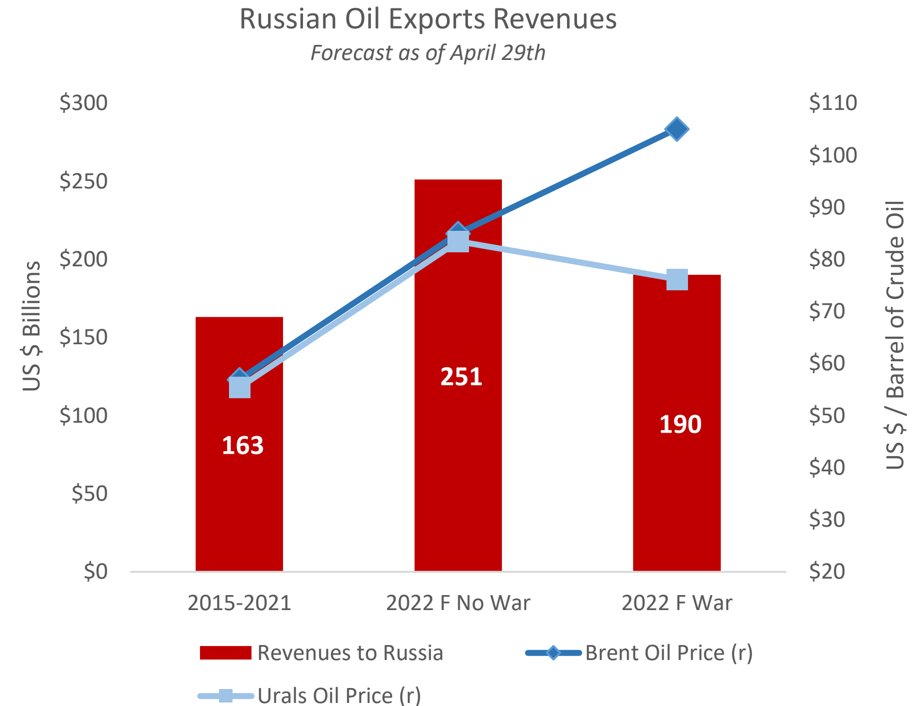
Russian Oil Export Revenues 2022

- Even with Urals prices suffering a deep discount to Brent and Russian export volumes tailing off, we anticipate Russia could book $190 bn in oil export revenues for 2022 as a whole
  - This is about $60 bn less than the revenue Russia would have achieved absent a war.
  - Nevertheless, it is still $30 bn higher than Russia's averaged oil export revenues for the prior seven years.
  - Current de facto sanctions are hurting Russia, but only relative to expectations absent war
- Russia's defense budget has averaged $70 bn in recent times
  - Even with the de facto sanctions in place, higher oil prices may provide Russia 50% more to spend on military than in the prior half decade (depending on other budget priorities)



Who benefits from Sanctions on Russian Oil?

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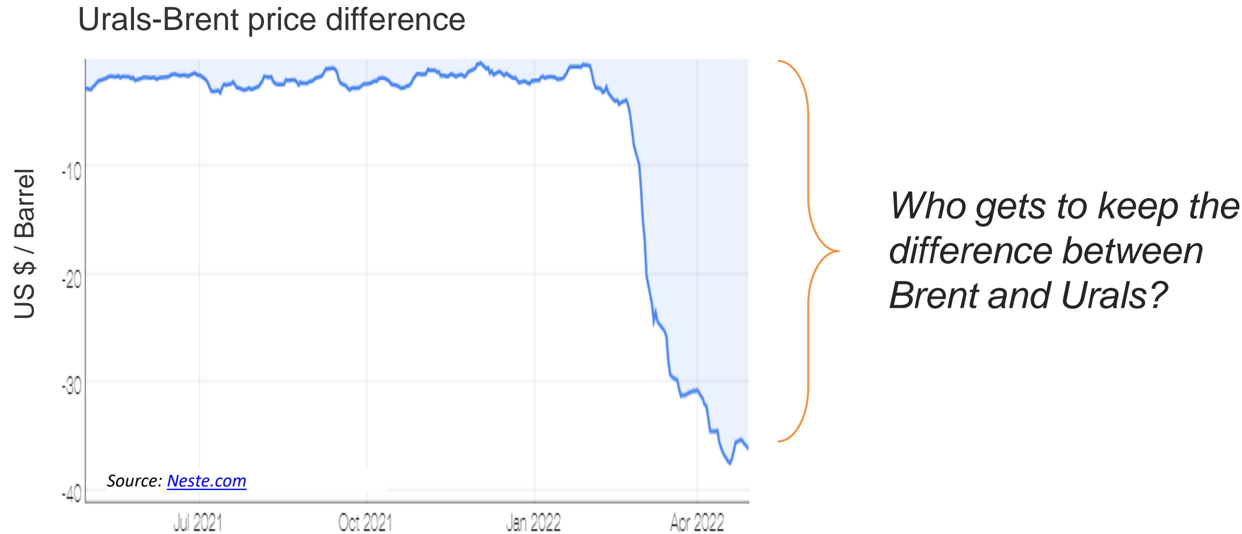
The Arbitrage in Russia Oil



- With Russian crude trading at a $36 / barrel discount to world oil prices like Brent, an enormous arbitrage opportunity has opened up
- Cheap Russian crude will be refined into retail products like gasoline and diesel and sold at the market rate, which is based on Brent and similar benchmark prices
- Therefore, there is a huge profit potential between the price of Russian crude and the selling price of gasoline and diesel at filling stations
- Who gets to claim this profit?

The Oil Value Chain

Russian Oil Producers | **Oil Traders** | **Refiners and Retailers**

- In a stylized model, oil traders like Vitol or Trafigura purchase crude from companies like Russia's Rosneft, the country's biggest oil producer. The traders then arrange for transport, storage, blending and delivery of crude to end users, typically international refiners like Shell or regional players like Bharat Petroleum of India, a recent purchaser of Russian crude
- The difference between the discounted price of Russian oil and the market value of the resulting refined products will therefore be captured by either the trading house or by the crude purchaser, in this case, oil refiners and retailers
- The profits are potentially immense. The arbitrage is nearly $300 million *per day* on the entire suite of Russian crude and product exports.
- Traders and refiners will therefore have a compelling incentive to stay in the game as long as possible
  - Vitol has stated that it intends to completely stop trading Russia-origin crude and products by the end of this year. That provides nine months of excess profits for the trading house.
  - Shell is marketing a "Latvian blend", in which, according to Bloomberg, "only 49.99% comes from Russia; in Shell's eyes, as long as the other 50.01 percent is sourced elsewhere, the oil cargo isn't technically of Russian origin."
- Current 'soft sanctions' create a huge profit potential and motivate sanctions-busting both by criminal enterprises and otherwise reputable oil companies and global trading firms.

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The Profit in Sanctions

- Assuming our Brent oil forecast of $112 / barrel for 2022 ($110 / barrel on May 4th) and our volume forecasts, those purchasing Russian crude and products in 2022 would earn a $68 bn windfall profit
  - This is a colossal incentive to bust sanctions in one form or another
- Another $33 bn is lost due to lower Russian export volumes
- Therefore, in the current sanctions regime
  - Russia is earning $60 bn less due to the war, but may earn $30 bn *more* than the prior seven years' average
  - Sanctions-busting traders and refiners will earn a whopping $68 bn more than last year in windfall profits
  - Ukraine will see no benefit from sanctions

Russian Oil and the Global Economy

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The Importance of Oil

- Oil consumption is a small portion of the global economy, only 4% of world GDP
- However, oil is a monopoly fuel for transportation, most notably for road vehicles, air transportation and much of seaborne trade
- Therefore, the physical mobility of goods and people depends upon the oil supply

Long lines waiting for gasoline in the 1970s: Americans rushed to buy smaller cars after the oil shocks.
Source: Washington Post

- For this reason, we refer to oil as an ‘enabling commodity’, because it enables other forms of economic activity
  - Other enabling commodities include water and air. Typically, neither of these is expensive – air is free – but without them, economic activity would come to a standstill. Indeed, life is not possible without them
  - Therefore, enabling commodities have a value far in excess of their dollar contribution to GDP
- As oil is an enabling commodity, when its supply becomes materially impaired, the world experiences an ‘oil shock’, resulting in a recession as the global economy adjusts to a lower level of oil production

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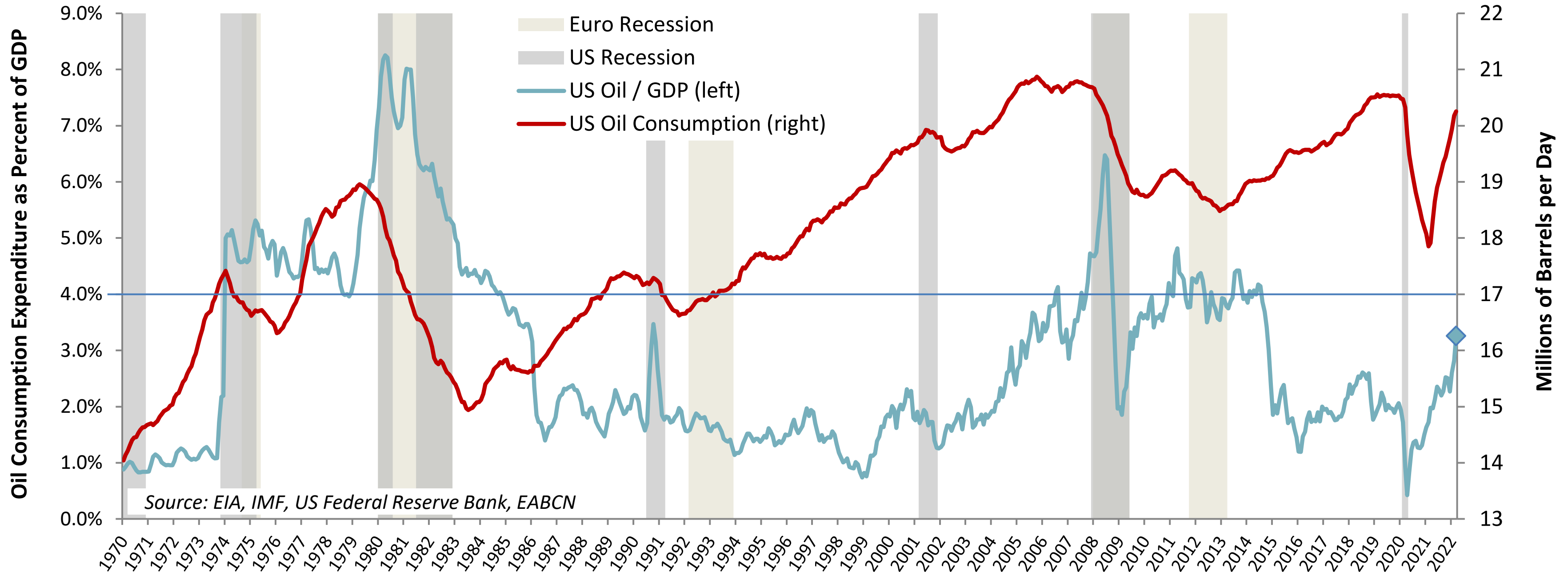
Oil Shocks



- In the last fifty years, the US has experienced seven recessions
  - US oil consumption fell in all of them
- Oil shocks were implicated in all but two of these recessions (the Dot Com bust of 2001 and the Covid pandemic)
- Of the oil shocks, three were caused by wars involving major oil producers
  - The Arab-Israeli War (1973)
  - The Iran-Iraq War (1979)
  - Gulf War I (1991)

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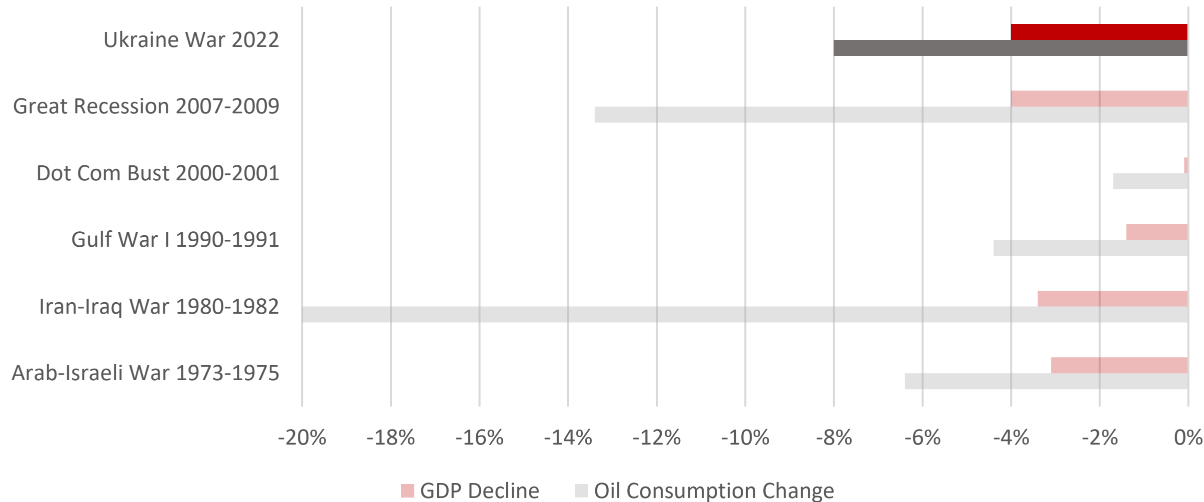
The Economic Impact of a Loss of Russian Oil



Source: EIA, IMF, FRED

- Under normal conditions, Russia exports 8 mbpd of crude and refined products
- The loss of this volume, even half of it, would cause a global recession
- The closest parallel is the first modern oil shock associated with the Arab-Israeli War (1973-1974)
  - In this war, US oil consumption fell by 6.4% vs a possible 8% loss due to sanctions on Russia
  - The resulting recession reduced US GDP by 3.1% and lasted 16 months
- Therefore, the complete or material loss of Russian oil exports should be anticipated to result in a stiff recession in major oil importing countries – most of western Europe – with an economic decline of 3-4% of GDP and a duration of 16 months on a *pro forma* basis

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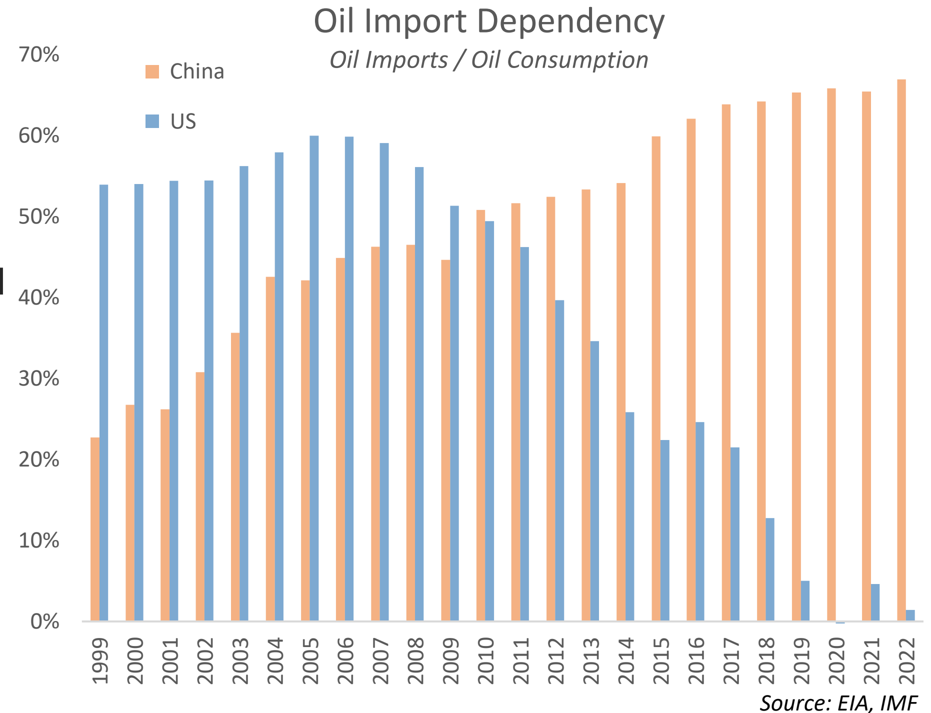
Differentiated Impact of an Oil Shock

- Due to its dependence on automobiles for transportation, the US has traditionally been considered highly exposed to oil shocks
- This is no longer true, or not entirely true
- Prior to the oil shock of 2008, US oil import dependency was 60%. The US imported 12 mbpd of the 20 mbpd of oil it consumed. When the oil price spiked, the US economy collapsed
- Since then, however, the US has become net independent in oil consumption due to the shale revolution
- On paper, the US is immune to an oil shock because losses in the consumer sector will be offset by gains in the oil producing sector.



- By contrast, China has become highly exposed to an oil shock
  - China imports two-thirds of its oil consumption, 10 mbpd of oil imports on 15 mbpd consumption
- In 2008, China's rapid growth caused the oil price spike – the only time in history that an oil shock was caused by a demand spike rather than a supply outage
  - As a result, China did not see a major downturn during the Great Recession
- However, in the case of a supply outage, China's economy will be hard hit. China is fully exposed.
- The Chinese therefore have a compelling reason to agree to a system which prevents a spike in oil prices associated with a material loss in global supply

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The Politics of Sanctions

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Sanctions are Prohibitions

NATO navies can prevent millions of barrels of oil from reaching the market.

During the 1920s Prohibition in the US, the police seized countless barrels of alcohol

- Sanctions are a type of prohibition
- Prohibitions involve the government intervening to prevent *willing buyers* from consummating transactions with *willing sellers* at *market prices*
- In this case, the EU is contemplating sanctions against Russian oil which would prevent Russia from exporting its crude to buyers in Europe and South / East Asia
  - The US has already banned crude imports from Russia
- Prohibitions – including on oil – have tended to produce sub-optimal results.
  - For Ukraine, a sanctions regime is a mortal threat

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Sanctions create Unresolved, Internal Stresses

Communist states prohibited private transactions on market terms, resulting in chronic shortages and a downtrodden public frustrated with the associated corruption, incompetence and hypocrisy. Black market transactions were endemic.

France's Yellow Vest movement arose in response to a 20% increase in the price of diesel. A ban on Russian oil exports would be far worse.

- Prohibitions, including sanctions, split the participants' personal interest from their societal interest*
- In the case of oil sanctions, politicians from NATO governments will be conflicted between
  - Supporting Ukraine and
  - Retaining their political popularity and supporting their respective economies
- If forced to choose, European and US political leaders will prioritize domestic concerns at Ukraine's expense

** This splitting of personal from societal interest was a central feature of communism*

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Prohibitions and Bad Behavior

The enforcement associated with prohibitions, including sanctions, leads to a variety of anti-social, but entirely predictable, behaviors

- **Hypocrisy**
  - Shell Oil Company is marketing a 'Latvian Blend' of 49.99% Russian crude and 50.01% non-Russian crude. The is a hypocritical pretense of compliance. The reputational risk to Shell is enormous
- **Temporizing and Delay**
  - The EU has stated that it is considering oil sanctions in August, *four months* from now. The war could be over by then. Oil trader Vitol has made similar claims.
- **Enforcement Evasion**
  - Russia may be expected to take steps to avoid sanctions controls, much like Iran does. This includes storing oil in large tankers at sea while identifying potential buyers willing to purchase the illegal oil; changing vessel names and identification codes to obfuscate the identify of its oil tankers; making its vessels go "invisible" by disengaging ships' Automatic Identification Systems; and secretly moving oil through ship-to-ship transfers to other, licit vessels. This process has already begun.
- **Sham Enforcement**
  - While the EU may talk a big game about enforcement, it may well turn a blind eye to illegal shipments to placate the Chinese or help keep oil prices low for their own economies
- **Crime and Cartels**
  - Most worryingly, sanctions are likely to create powerful and dangerous cartels and gangs. These will of course include the Russians, but legitimate traders like Vitol and Trafigura, or at least some of their employees, may also find the profit potential irresistible. A single tanker load may offer a $40 million profit. Such a tanker may be contracted by small team of one or two people. Barriers to entry are low. A sanctions regime will create criminal enterprises along the Black Sea coast through the Bosporus.

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Sanctions will strain the Anti-Russia Coalition

A sanctions regime will put pressure on the international alliance against Russia

- **India**
  - Indian refiners continue to purchase Russian crude. A $38 discount is worth billions of dollars to India. The lure will be irresistible. India's Finance Minister: "If oil is available and at a discount, why shouldn't I buy it? I need it for my people."
- **China**
  - Both the potential profits and the need for affordable crude will push China to bust sanctions against Russia.

President Biden warns Indian Prime Minister Modi about buying Russian oil.

- **Germany and France**
  - Neither Germany nor France can sustain oil prices at the levels that meaningful sanctions against Russia would imply. This is compounded by their dependence on Russian natural gas.
- **Hungary**
  - Hungary has a deep dependence on Russian energy. Prime Minister Viktor Orbán also has a troubling relationship with Putin and Russian intelligence services. Hungary has vetoed the EU oil embargo.
- **The United States**
  - The US government, as a practical matter, is naïve about black markets and related behavior. The US will be inclined to punish those buying cheap Russian oil, India chief among them. As a result, the US could easily alienate countries like India and China and thereby weaken the anti-Russia coalition.

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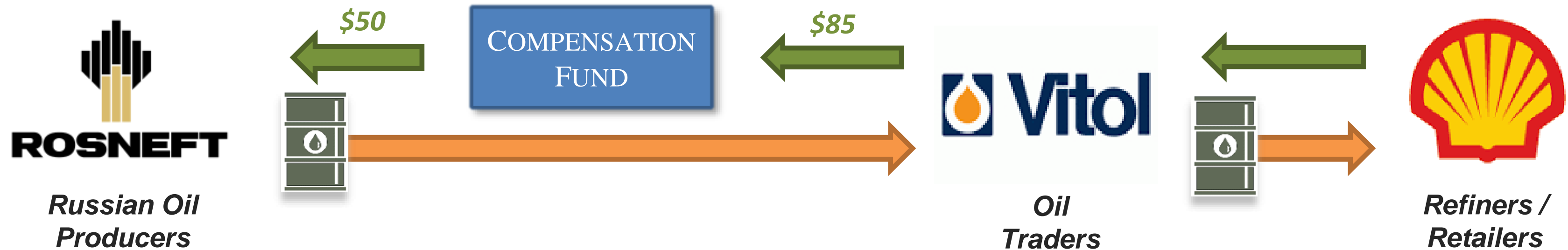
A Better Approach to Russian Oil Sanctions

A Legalize-and-Tax Approach



- A Legalize-and-Tax approach would add an intermediary to the oil supply system
  - The physical flow of oil would remain as it has been, from the oil producer to the oil trader and on to the ultimate buyer, typically a refiner
  - The flow of funds, however, would see the addition an intermediary, a ‘Compensation Fund’
- The Compensation Fund
  - Cash payments for oil would be made from the buyer, typically an oil trader, to the Compensation Fund, which would transfer a share of the proceeds to the Russian oil producer
  - About half the revenues would stay with the Compensation Fund

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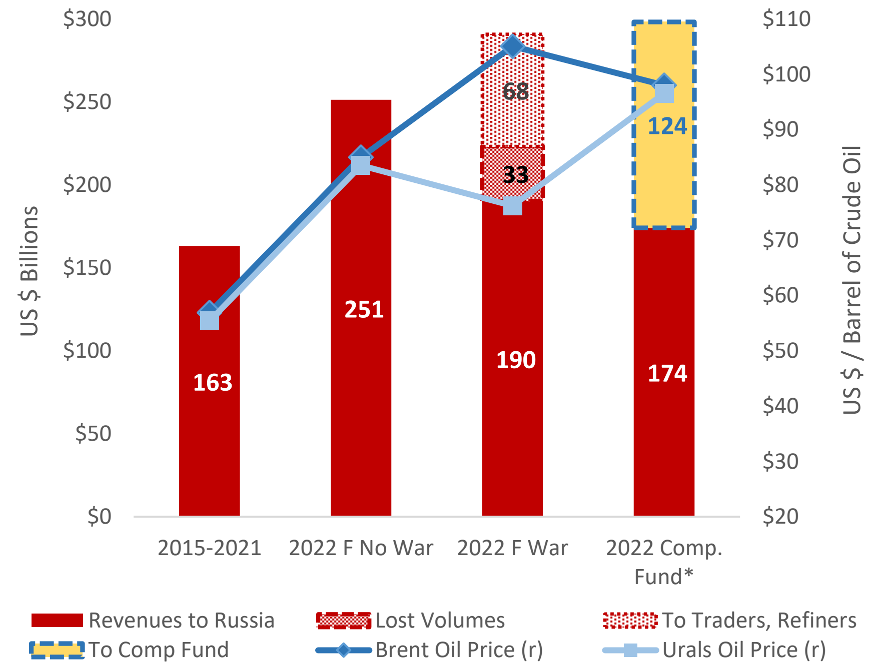
The Compensation Fund

- In the proposed system, Russia could freely sell its oil and refined products
- Payment, however, would have to be channeled through the Compensation Fund
- The Compensation Fund would return a portion of proceeds to Russia, here envisaged as approximately the same proceeds as during the 2015-2021 period,
  - Russia would be no worse off than in recent history and therefore no less financially incentivized to continue to produce oil at customary levels
- The balance of proceeds would be retained by the Compensation Fund to pay for Ukraine's losses, ongoing expenses, rebuilding, rearming and the reconstitution of civil society
  - For planning purposes, Fund revenues might be budgeted at $90 bn / year
  - This amount constitutes 60% of Ukraine's pre-war GDP



* *Annualized based on H2 2022 forecast; as of May 4th*
Source: EIA, BP Statistical Review, Prienga analysis and forecasts

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Conclusions

Ukraine's Financial Needs

- **Ukraine has substantial financial needs, both current and prospective**
  - The State budget shortfall is $5 billion / month, rising to $8 bn / month
  - Ukraine has seen approximately $100 bn in damaged infrastructure
  - Total realized losses could reach $150-$300 bn (1x-2x GDP) to some plausible end of the war
- **Who will cover Ukraine's losses?**
  - From its own resources, Ukraine will require 20-30 years to rebuild the country
  - Transferring Russian central bank assets to Ukraine is problematic without a US declaration of war on Russia
  - Even for the US or the EU as a whole, $100 billion in unconditional support for Ukraine is a substantial sum of money not easily secured from voters
  - The IMF can and will make loans, but these must be repaid over time
  - There is no guarantee, and some reason to be skeptical, that NATO countries will be willing to materially cover Ukraine's reconstruction costs
- **An impoverished Ukraine creates risk**
  - President Putin and Russia can still claim victory and be incentivized to yet more aggression if Ukraine is destroyed economically
  - The EU may be reluctant to admit Ukraine for fear of the implied financial burden
- **Ukraine needs an independent source of funding**
  - Ukraine cannot depend on unlimited support from NATO countries
  - Ukraine must have a long-term, sizeable source of funding sufficient to cover its war and reconstruction costs

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A Successful Sanctions Program

- **Sanctions on Russian oil as currently discussed in the media do not meet Ukraine's needs**
  - Neither Europe nor East Asia can sustain the oil prices a full embargo on Russian exports implies
  - Full sanctions would lead to a stiff, global recession lasting 16 months, based on historical precedent
  - Proposed sanctions will lead to temporizing, hypocrisy, corruption, and criminality by both Ukraine's allies and enemies – these trends are already visible
  - Russia's oil revenues under a sanctions regime may prove higher than the average of the previous seven years
  - Ukraine receives no benefit
- **A legalize-and-tax approach has a much higher chance of success**
  - A legalize-and-tax approach – a Compensation Fund – would allow Western Europe and East Asia to access the oil they need at market prices without an oil price spike or an oil shock recession and without creating internal political tensions or threatening the alliance
  - Because the described Compensation Fund is consistent with sustainable oil production and profitability in Russia, such an approach can remain in place for years to decades
  - This will provide Ukraine with a steady stream of income around 50-80% of GDP for many years, enough to rebuild the country
  - A compensation approach can take the matter of reparations off the table in any peace negotiations, thereby allowing both Ukraine and Russian greater flexibility in achieving an accommodation
- **A Compensation Fund is the solution Ukraine needs**

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About the Author

Mr. Kopits runs Princeton Energy Advisors.

From 1990 to 2005, he advised Eastern European governments and corporations on strategy, finance and public policy.

After returning to the US, Mr. Kopits worked in New York as a strategy consultant and investment banker in shipping, as well on projects related to oil and gas exploration and production technologies and pipelines.

He has written extensively on oil and the economy and advised a leading hedge fund on the macro oil outlook.

In recent years, Mr. Kopits has written frequently about market-based solutions to black markets similar to the proposal contained in this presentation.

His published articles on the Ukraine war can be found here.

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