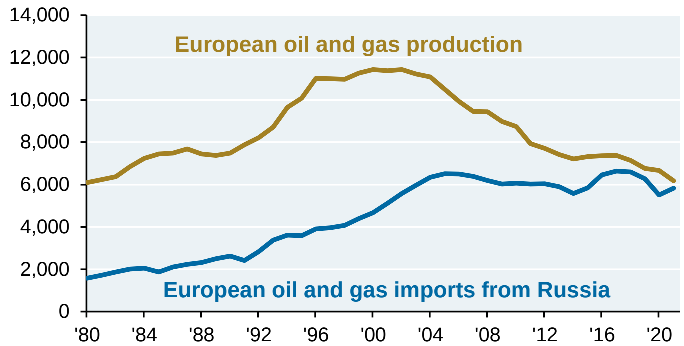
Russia/Ukraine and US LNG: energy implications

There are a lot of things going on this morning: the S&P 500 is down 1.7%, European stocks are down 4%-5%, Russian stocks are down 35%, the Ruble plummeted and then rebounded when the Russian central bank announced interventions, Brent/WTI rose to $105/$102, European spot market natural gas prices rose from $28 per MM btu $39 per MM per BTU (compared to $4.8 in the US, which we discuss below), corn and wheat prices are limit up (Ukraine is 10%-15% of global exports of these grains), Bitcoin (store of value??) is down 5%, and the US 10 year is back down to 1.85%. Given these moves, the next global PMI reading could fall from 54 to something in the mid 40's, which would be contractionary territory.

The focus of this brief note: the price Europe is now paying for allowing its energy reliance on Russia to reach extreme levels, and the implications for the durability of sanctions placed on Russia if Russia retaliates with energy sanctions on Europe.

European reliance on Russian energy
Thousand barrels per day of oil equivalent

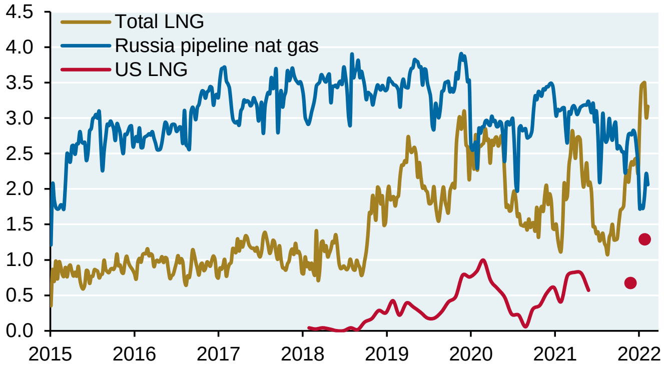


Source: BP, Gazprom, Eurostat, Perovic et al, Russia Federal Customs Service, JPMAM calculations. 2021.

One of the most important things to watch will be the severity of OECD sanctions on Russia, what kind of energy sanctions Russia imposes on Europe in return, and how long Europe could withstand them. Some commentary suggests that US and other country LNG exports to Europe could help alleviate the situation if Russia constrains energy exports. It looks like the benefits would be marginal at best. If that's the case, part of me wonders whether the sanctions now being discussed will last that long.

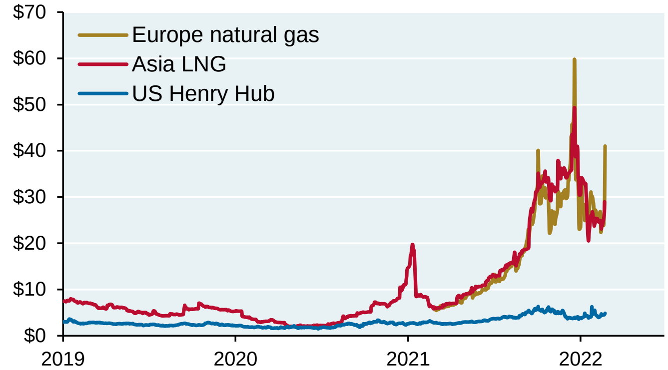
- Over the last 5 years, Russia has supplied around 40% of European natural gas. Some countries are more exposed than others. Italy is the most exposed, since 50% of its electricity comes from natural gas and 95% of that amount is imported
- European LNG imports have risen in recent months as pipeline deliveries from Russia slowed (first chart on next page). However, this rise in LNG imports does little to change the *cost*: the latest data from Platts show that LNG import prices into Europe are only around 5% below European domestic gas prices, which are soaring. The second chart on the next page shows European domestic gas prices (gold), an LNG import price proxy based on Japan/Korea (red), and the US Henry Hub natural gas price (blue). US natural gas prices are not really relevant for Europe since LNG import prices have to cover shipping costs as well as the costs of liquefaction by exporters and regasification by importers. There can be temporary exceptions to this rule of thumb, as seen in the summer of 2020 when LNG import prices in Asia converged to Henry Hub prices. However, this was due to an unusual collapse in energy consumption due to COVID, and is not representative of the normalized cost of LNG vs natural gas.

European natural gas imports: Russia vs LNG
Billion cubic meters per week



Source: Bruegel, EIA, Diesel & Gas Turbine, JPMAM. February 11, 2022.

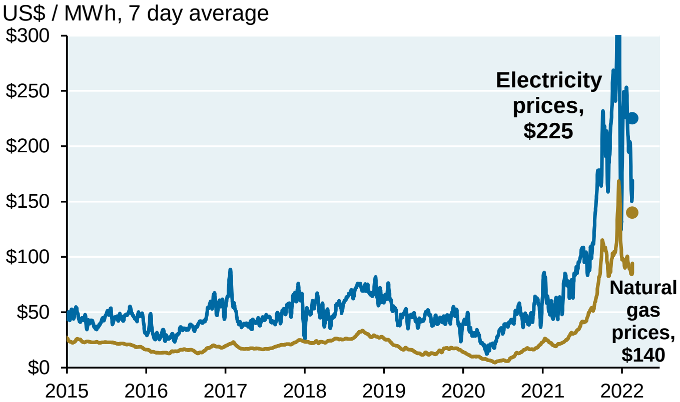
Natural gas prices
$/MMBTU



Source: Bloomberg. February 24, 2022.

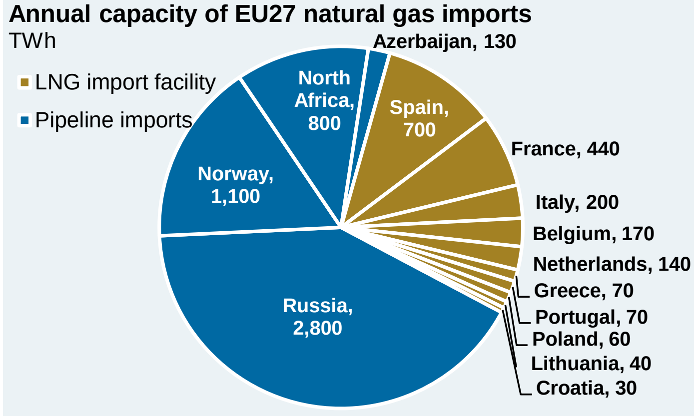
- The bottom line: LNG exporters generally sell their gas in the neighborhood of European gas (pipeline) spot prices, and it would take a flood of LNG imports to change the supply equation enough to drive overall European gas prices much lower
- As a result, the surging electricity and natural gas price situation in Europe (next chart below) may persist for some time now that Russia has invaded the Ukraine
- *LNG Bottlenecks*. European LNG terminals with the greatest excess capacity are also not adequately connected to the continent's broader gas infrastructure. Furthermore, bottlenecks in Europe are not confined to the need for more LNG cargoes making their way to the continent. Other bottlenecks include the availability of European regasification facilities which are operating at very high utilization rates, and exporter liquefaction facilities which are operating at 82% utilization
- Technically, the Dutch have additional gas capacity they could extract at Groningen fields, but the Dutch have issued a drilling moratorium due to earthquake risks
- If Russian energy capacity to European were to fall in half, there is simply not enough European LNG import capacity to utilize to fill the gap (see pie chart). That's why EU governments have already been talking about gas rationing. Under EU emergency plans, national authorities will curtail the supply of natural gas to large industrial users first in order to maintain the flow of gas to households, small businesses and social services. In the industrial sector, the only short-term option is demand curtailment. Even before the Ukraine invasion, steel and aluminum makers announced reduced production, silicon producer Ferroglobe switched off two furnaces in Spain, and chemicals and fertilizer companies already reacted to high prices

Europe energy prices
US$ / MWh, 7 day average



Source: Bloomberg. February 24, 2022. Dots represent latest daily prices.

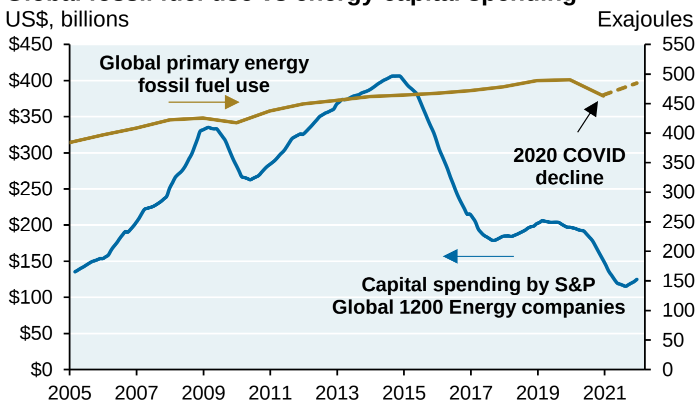
Annual capacity of EU27 natural gas imports
TWh



Source: Bruegel, JPMAM. 2022.

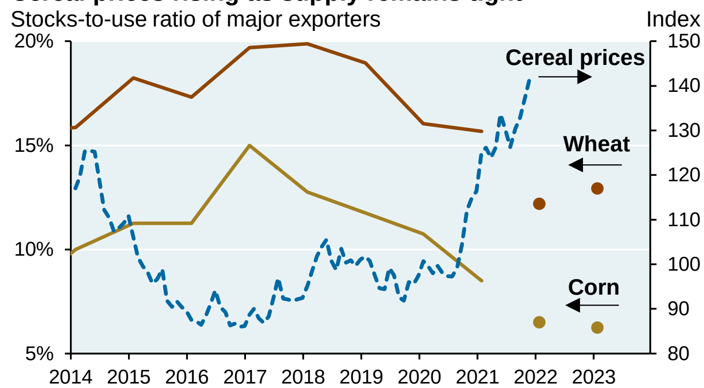
- For everyone thinking that long term US LNG contracts might be cheaper for Europe than the LNG spot market, that has recently been true but is not always the case in Asia. As shown in the chart at the bottom right side of the page, long term LNG contracts traded at a *premium* to LNG spot prices in 2018 and 2019. Spot prices surged above long term contracts since 2020, however. Bottom line: long term LNG contracts could be less costly for Europe, but would require 5-15 year contracts at prices well over normalized pipeline levels
- There is also the geographical issue that 30% of Europe's energy imports flow through pipelines on Ukrainian territory, and a shooting war obviously puts these facilities at deliberate and accidental risk
- Most of this note was about European natural gas reliance on Russia, but Europe's oil reliance on Russia is material as well (27% of European oil imports in 2021), particularly at a time when OECD oil inventories (estimated as Days of World demand) are at their lowest levels in 15 years, and as global capex in oil & gas has been plummeting (next chart below)
- On agriculture: the stocks to use ratio for grains was already at the tightest levels in a decade heading into 2022 (second chart), a situation now worsened by the situation in the Ukraine
- It is highly charged and debatable issue, but for context, I include on the next page what I wrote about the Ukraine, NATO expansion, Russia and liberalism vs realism on February 15

Global fossil fuel use vs energy capital spending



Source: BP, Bloomberg, IEA, JPMAM. Dec 2021. Dotted lines = estimates.

Cereal prices rising as supply remains tight

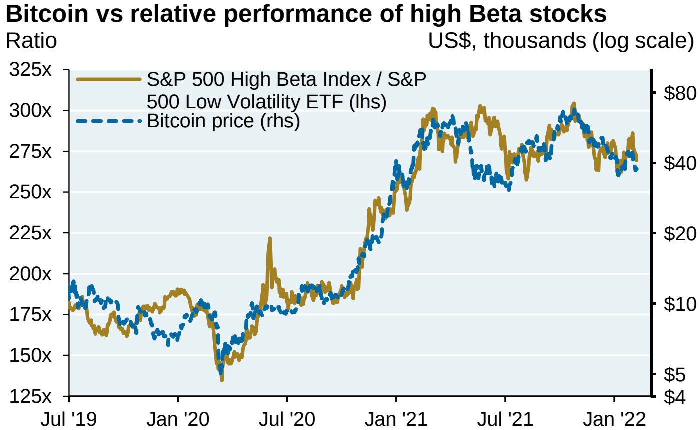


Source: Bloomberg, USDA, JP Morgan Commodities Research. November 2021. Dots = JPM forecasts.

Before I forget

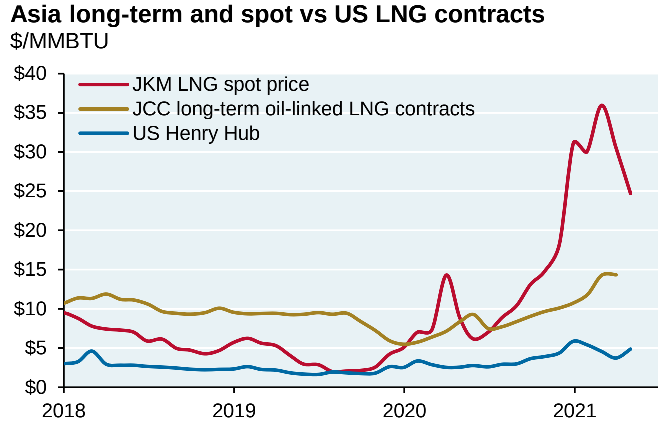
I recently added this new chart on the left to our Maltese Falcoin paper. If you're searching for a valuation model for crypto, look no further than the price of growth stocks vs the price of lower volatility stocks. In other words, Bitcoin trades as market beta exposure. That's some store of value you've got there.

Bitcoin vs relative performance of high Beta stocks



Source: Bloomberg, Cornerstone Macro, JPMAM. February 24, 2022.

Asia long-term and spot vs US LNG contracts



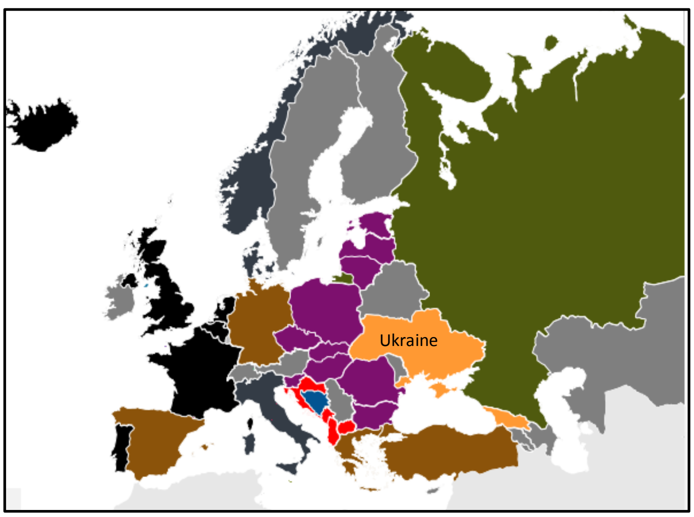
Source: Bloomberg. January 2022.

From the February 15, 2022 Eye on the Market

Last weekend I reread John Mearsheimer's essay from 2014 in Foreign Affairs magazine, entitled "*Why the Ukraine Crisis Is the West's Fault: The Liberal Delusions That Provoked Putin*"[1]. The piece reviews how we got here and what policy options might have been chosen instead.

The story begins with the Clinton Administration's NATO enlargement in the 1990's, an expansion of more territory than French, German and Italian land mass combined. Mearsheimer cites George Kennan, an architect of the US post-war policy of Soviet containment, on NATO's enlargement in 1998: "I think the Russians will gradually react quite adversely and it will affect their policies. I think it's a tragic mistake. There was no reason for this whatsoever. No one was threatening anyone else". Ten years later in 2008, NATO leaders announced that "Georgia and Ukraine would become members of NATO". The Russians made clear at the time that red lines had been crossed, which the US and Europeans mostly ignored. In 2013, the president of a US-bankrolled organization working in the Ukraine to draw it into the Western orbit wrote in the Washington Post, "Ukraine's choice to join Europe will accelerate the demise of the ideology of Russian imperialism that Putin represents. Russians, too, face a choice, and Putin may find himself on the losing end not just abroad but within Russia itself." These predictions have not aged well.

Since the 1990's, there has been a battle between Liberalism and Realism in Western foreign policy circles on the Ukraine. Depending upon what happens now to the Ukraine, which the West has made clear it will not defend militarily[2], the Realists might turn out to be right. That's why Mearsheimer concluded in his essay that some sort of "Finlandization" of the Ukraine would be a better outcome for all sides.



NATO enlargement
Black: Original members (1949)
Brown: 1950-1980
Purple: 1999-2004
Red: 2009-2020
Blue: NATO Membership Action Plan
Orange: "Intensified NATO dialogue"
Gray: not in NATO

[1] John Mearsheimer is a Distinguished Service Professor of Political Science at the University of Chicago

[2] When the Ukraine abandoned its nuclear weapons 30 years ago, the **Budapest Memorandum** offered Ukraine security assurances against the future use of force by the US, UK and Russia. But the Memorandum only required signatories to raise any issues with the UN Security Council; it was not a defense treaty and the US has stated in the past that it is not legally binding.

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