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« THE WAR OF COMMODITIES: RUSSIA-UKRAINE CONFLICT »

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Grazie!

ABSTRACT: THE WAR OF PARADOX

This thesis is a work born with the intent of analysing how the war scenario came into reality, what is the current evolution of the conflict, which measures were taken globally to address the issue and the future scenarios and direct consequences of the conflict.

We may define this as a war of paradox because all the nations involved are acting in a way which on one hand is loyal to the political position they took, while on the other it can obtain some ambiguous results. Europe for example is helping Ukraine by sending weapons, war related goods and is helping some people to be re-allocated in the EU territory but it also paying daily to Russia about 700 million\$ daily for the gas supply. Basically, it is indirectly financing the war, it is estimated in fact that about 80% of the daily expense of Russia is covered by Europeans paying for their energy supply.

Russia is fighting every day on the battlefield with Ukraine, bombarding civilians and public facilities, but still never hit a single pipeline. Moreover, since some of the pipelines which connect Russia to Europe pass through Ukraine, the Kremlin pays a year royalties which amount to about \$ 1.5 billion to Ukrainian government, that figure amounts to 1% of their GDP. Putin is both bombarding and paying the country he's fighting with.

Lastly Ukraine is defending itself from Russia, but in any case, it will be worse off by the war: if it wins, this means that Europeans stopped buying gas from Russians and therefore the pipelines become useless, if it loses Russia takes full control of the territory and pipelines would be the last of their problem.

This conflict is very amazing in the sense that the war is fought namely only between two nations, but the consequences and the actions taken to address the issue have global developments and influence. This situation has shifted financial markets especially in the field of commodities, to a new era. The war can be called the "Economic World War 3", we will see how this conflict started chain reactions in many businesses and industries, affecting globally both rich and poor countries in different ways.

This work was completed on the last week of July, all events and evolutions happened from August on won't be included in this thesis.

«Poiché voi sapete tanto bene quanto noi che, nei ragionamenti umani, si tiene conto della giustizia quando la necessità incombe con pari forze su ambo le parti; in caso diverso, i più forti esercitano il loro potere e i più deboli vi si adattano».

TUCIDIDE, *Il dialogo dei Meli e degli Ateniesi*, in «La guerra del Peloponneso».

CHAPTER 1. THE WAR OF COMMODITIES

1.1 Introduction

This chapter of the thesis is focused on making clear why Russia is a major player in global energy markets, its consequences and the future possible scenarios.

We will cover numerically where the nation stands in the market, who are its main trade partners and the dependence on Russia (as energy supplier) some States have developed over the years. There will be a discussion on how the war affected the energy markets, and its consequences on firms and households.

The work will cover in particular what is the situation in the Italian peninsula and look for alternatives providing the latest updates possible.

Eventually we will show how all these nations can shift (when possible) from Russian energy supply, how can this be done and if this scenario is feasible.

Through the chapter we will see how dependent Europe became from Russia in terms of energy, with the bundle of Russian oil and gas accounting together for a fifth of total European Union Energy Supply.

On the other hand, we will also analyse the fact that Russia needs Europe as a stable customer for the commodities; it's important to keep in mind that the problem is not only European but also Russian. The two sides of the coin make eventually the situation worse both for the buyer and the seller.

In order to understand the conflict better from an energy-based perspective, it's important to take a step back and understand how the current situation was born from long term commitment in the energy market of the nations involved directly or indirectly in the conflict.

1.2 Historical background¹

The trade of energy between Russia and “European” states, was born at the time of the Soviet Union, - URSS - in particular when there was an agreement made between West Germany (before the collapse of Berlin wall 1989) and Soviet Union in which Germans committed to fund the project of a pipeline connecting the two countries while the Soviet Union provided energy in return. When the Soviet Union collapsed, the newly born Russian federation inherited this “monopoly” on the Energy sector and kept trading with EU.

¹ See: <https://www.youtube.com/watch?v=Eo6w5R6Uo8Y>.

To understand this interdependence, it must be clear that Russia didn't possess many ports in warm water that could be used year-round for shipments due to the formation of ice, so it focused on building in land infrastructure (pipelines).

This was financed also by European countries (Germany especially), but since this kind of work is very expensive and time consuming, they basically signed a long-term commitment on both sides.

From 2000 to 2012 the value of Russia export of oil and natural gas increased by 700% (reaching \$ 341 billion in 2012), thanks to the fact that the two became more and more valuable with the passing of time.

The funds generated by these exports, allowed Putin to invest heavily in the army and pay off the outstanding debt accumulated by the Soviet Union.

1.3 Russia Ukraine gas-based relationship

Russia in 2005 had 80% of the gas directed to Europe passing through Ukrainian pipelines; this in fact was a huge issue for them since they weren't part anymore of the same country and Putin couldn't directly control it.

This meant that Ukraine, since it was vital in the process of supplying Europe with gas was too powerful.

The tension between the two countries became more intense when the more Western-oriented new president Viktor Juščenko was elected as Prime Minister of Ukraine.

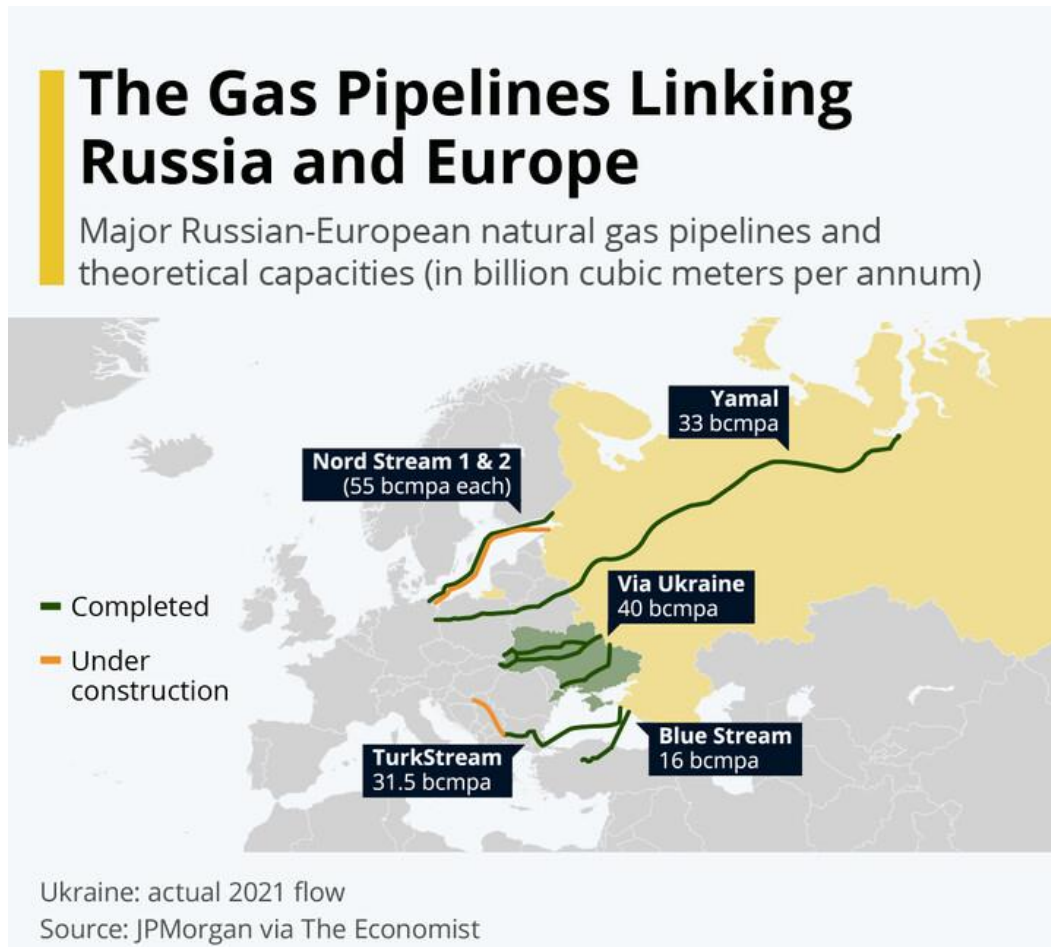
In that year in fact Russia asked Ukraine to transfer them the full ownership of the pipelines, request that was readily refused by the Ukrainian government.

Russia then cut off supplies of gas to Ukrainians twice in winter 2006 and 2009 in order to threaten them and make them aware of Russian influence; moreover the Kremlin accused Ukraine of redirecting some of the gas that was intended to go to Europe to their own network of gas distribution for their own interest.

Putin understood that he couldn't rely in such a way on Ukraine, so Russia began building alternative routes to export its gas without passing through Ukraine, thus reducing its dependence on Ukraine.

Russia then built five other pipeline networks:

1. Yamal which passes through Belarus;
2. Turkstream and Blue Stream which pass beneath the black sea and end up in Turkey;
3. Nord Stream 1 and two which pass beneath the Baltic Sea; they costed in total 21 billion euros and Nord Stream 2 is not even being used. Nord Stream 1 is the longest subsea pipeline worldwide and carries about 40% of gas coming to Europe from Russia.



In 2010 the president of Ukraine became the pro-Russian Victor Yanukovych.

This shift is fundamental, because at that time some energy companies found out that Ukraine had natural gas reserves of 1.1 trillion cubic meters and could potentially turn out to be three times that. The vast majority of the reserves were held in the regions of Donbass and Crimea; so it's not by chance that the conflict started there among others ancestral historical reasons. This meant that Ukraine had the second largest natural gas reserve of the European continent only behind Norway and could potentially reach (after adequate exploration) 3,5 times what Norway has. Moreover, Ukraine already had a pipeline network built from it to Europe, so

this nation became strategically very relevant since it had both the product and the distribution chain.

Ukraine also possesses some storage facilities for gas, if it was to annex to Europe, the latter would be able to increase its storage capacity of gas by a third. Indeed, the Kremlin wouldn't be able to threaten Europe at least so heavily anymore by reducing the gas supply.

Ukraine represented a hazard to Russia because it could potentially replace Russia in supplying (for a part) gas to Europe.

Back then though the only problem for Ukraine was that it didn't have the economic capacity to go after those reserves, it must be considered in fact that infrastructure for that kind of businesses requires a very large upfront investment. Moreover, at that time the president of Ukraine was Russia-oriented and did not want to interfere with the Kremlin.

The threat though became serious when the Ukrainian government signed an agreement with ExxonMobil, Shell, and Chevron so that these firms could build infrastructure to exploit and extract the natural gas reserves. Ukraine then was in a dominant position because it had both the resource and capability of redirecting it.

What happened at the time was that the president was about to sign an agreement to export in Europe but resigned last minute for an agreement with Russia for cheaper gas and some cash earned through selling government bonds worth about \$ 15 billion to Russia. His regime collapsed thanks to a revolution, Ukraine became then the threat we were talking about and he was later sentenced for betrayal.

Putin then ordered the invasion of Crimea which resulted in the three companies cited before leaving their plans in Ukraine due to the political instability of the country. In those years though the price of oil and gas collapsed, and Russia suffered from this. Hence the price started to grow again reaching the highest level in a decade in February 2022, when the invasion of Ukraine began. When the price of commodities is high, Russia can spend and invest, it's not by chance that the invasion started simultaneously with the price increase.

1.4 The natural gas market

Gas as an energy development mainly used to generate electricity and it can be transported through pipelines (on land) and via sea on ships in the form of Liquefied Natural Gas -LNG- which is the liquefied form of natural gas. Pipelines are by far the most common way of transporting gas, since they are safe, reliable and enable to move large volumes. On

the other hand, LNG is more expensive since gas must undergo a treatment first and occupies a larger volume in its liquefied form.

Russia is currently the world's second largest producer of natural gas after the US and holds world's largest gas reserves. Moreover, it's important to say that it is the first worldwide exporter, making many countries dependent on it to produce energy. In 2021 the country produced **762 bcm** (billion cubic meters) of natural gas and exported approximately 210 bcm via pipeline.

Gazprom, which is a state-owned company, is the largest gas producer, accounted for 68% of Russian gas production in 2021.

Russia has a wide-reaching gas export pipeline network, both via transit routes through Belarus and Ukraine, and via pipelines sending gas directly into Europe (including Nord Stream, Blue Stream, and Turk Stream pipelines).

The Nord Stream 2 is a pipeline network built in the North Sea to connect Russia and Germany in order to avoid paying tariffs to all nations who had pipelines passing through their territory. This project costed around 11 billion Euros. Russia completed work on the Nord Stream 2 pipeline in 2021, but the German government decided not to approve certification in the wake of the Russian invasion of Ukraine. Russia natural gas accounted for 45% of total EU imports in 2021.

This share has increased in recent years because European domestic natural gas production has declined. Germany, Turkey and Italy are the largest importers of Russian natural gas.

Furthermore, Russia has been expanding its liquefied natural gas capacity, in order to compete with growing LNG exports from the United States, Australia and Qatar.

In 2021, the government released a long-term LNG development plan, targeting 110-190 bcm/year LNG exports by 2025. In 2021, Russia exported 40 bcm of LNG, making it the world's 4th largest LNG exporter and accounting for approximately 8% of global LNG supply.

Russia has oil and gas production facilities throughout the country, but the bulk of its fields are concentrated in western and eastern Siberia.

1.5 Micro analysis of gas market - Supply and demand in market for natural gas²

The price of gas increased by 847% from January 2021 to December of the same year.

Supply side: As already explained the main part of natural gas comes from Russia, then there's LNG and some other states which have a smaller share of the European market.

The supply side is affected by:

- 1) The levels of production, of course the more gas is extracted, the lower the price is.
- 2) The levels of storage. As already explained, storing gas is fundamental to be sure of not running short in a time of need. A nation with high levels of storage is not greatly affected by change in prices, while a nation which finds itself with its tanks empty, will probably have to pay a premium on the gas since it is in severe need of it. We conclude that the more gas is in storage, the less the volatility of gas price will be.
- 3) Volume of import and exports. A nation who finds itself with a gas quantity that is just enough for its own consumption won't export it, the supply will reduce, and price will rise. On the contrary, if a nation has a great gas surplus, it can export it, supply grows and price lowers.

Suppliers have great power in affecting the price: since there aren't many suppliers, one player in the market is able to affect the overall price of the whole industry. For instance when Russia wants to threaten a nation, it can easily cut the supply to increase the spot price for gas.

Demand side: The main players in the demand side are Europe and Asia. These two continents have great and developed industrial sectors and a prolific economic system but their territory doesn't supply sufficient resources to keep up with the pace with production. Since the supply of the resource is limited, the two compete constantly and will do it more and more in the near future especially in the sector of LNG.

The demand side is affected by:

- 1) Temperature: high temperature means increasing the use of air condition and therefore greater demand, the opposite is true for heating systems and cold weather.

² See: <https://www.eia.gov/energyexplained/natural-gas/factors-affecting-natural-gas-prices.php#:~:text=Natural%20gas%20prices%20are%20a,to%20lead%20to%20lower%20prices.2..>

- 2) Level of economic growth: the more a nation expands and grows its economic production, the more resources will be needed to sustain domestic production
- 3) Substitutes such as green energy, coal, oil. The cheaper a substitute gets, the less demand on gas is required and smaller the prices become.

1.5.1 What affects natural gas price³

In the last year price of gas has surged, in Europe especially after the lockdown due to the pandemic; the reopening of businesses and production facilities made the demand grow very quickly at a pace that couldn't be chased by the supply.

Inflation is another factor: as we know inflation drives up the price of everything and reduces consumer spending power if case there isn't an adequate rise in income as well. The gas markets though is very sensitive to Interest rate changes, and therefore inflation. This happens because the extraction, processing and shipment of gas is a highly expensive process which requires great capital. If interest rates are high (to combat high inflation) it's more expensive to borrow capital and therefore the whole market suffers from it. Since most of businesses use gas for their production and gas expenses are a heavy part of the balance sheet, this crisis is making them pay way more than before.

In the long run we will see how big the impact will be on end products, because gas is a fundamental commodity in almost every business, today we just have the feeling of that because prices take time to adjust to the market conditions.

Weather: a cold winter needs more usage of heating system, therefore greater demand, and higher price for same supply. The same applies for a warmer summer: the hotter it is, the more people will use air conditioning and therefore demand will increase.

In August 2021 a hurricane named Hyda hit the western us states. As a precaution 90% of the refineries for oil and natural gas in the Gulf of Mexico were closed. Clearly the supply of the two commodities dropped and in the two following two weeks, the spot price of gas increased by 50%.

As we saw earlier the geopolitical situation of the world is also fundamental in price changes, so I won't treat further on this.

³ See: <https://capital.com/natural-gas-analysis>.

Substitute: the greener the energy sector becomes the cheaper gas price will be. In the next years the world will rely less and less on fossil fuels, and therefore the demand for it will shrink. Moreover, is likely that there will be many taxes and tariffs to discourage the usage of fossil fuels. This is not affecting much the market today because the transition to a greener economy is a long process, but we can be certain that by 2050 nobody will be afraid of the price changes of gas, at least in the western part of the globe.

Competitors: the price is greatly affected by the competition on the demand side. The price of gas has started to grow before the war, in fact there was a rise in demand way before Putin declared war to Ukraine. The war was only the last element which added up to this trend and is not the major cause of rise in gas prices; so let's see which factors made the demand grow. Firstly, there was a low level of rainfall in Brazil last year, this nation counts heavily on hydroelectric energy for its supply and therefore had to find an alternative source (count that Brazil has a population of over 200 million people).

North Sea is full of wind turbines but last year the wind didn't blow favorably so they produced less energy than expected.

China augmented its demand for gas, and as we can imagine the volume bought by Chinese firms is surely enough to move the equilibrium price up.

1.6 EU energy supply and dependence on Russia⁴

Today the largest gas field in Europe is in the Netherlands, but this project is coming to an end since the extraction of gas threatens that area with earthquakes.

Spain and Portugal refurnish two thirds of their imports from Algeria, so they aren't so afraid of Russia cutting supplies. The fact that they do not buy that much gas from Putin is logical because those nations are the two further west of Europe making the possible gas flow difficult to come to life. The UK now after reducing the coal consumptions, have half of their demand of gas met by imports mainly from Norway while, most of the rest comes from domestic production.

The biggest EU producer and exporter of natural gas is Norway which is able to fully satisfy the domestic energy market demand and exports the surplus.

⁴ See: <https://www.youtube.com/watch?v=iMiQeS1XywA>.
See also: <https://ig.ft.com/europes-gas-crisis-pipelines-explainer>.

As we can see in the table below, the EU is very attached to Russia for its gas supply, since it's importing from it little less than half what it consumes. The EU nations rely on gas for a quarter of their energy production and half of it is imported from Russia. Some nations import more than others do, but this must be related to the economic power of a nation. Having a state which has a strong industrial sector in Europe dependent from Russia is more serious than having a small country in the same situation.

Among the most productive nations, the most dependent by far is Germany, which pays to Russia about 220 million euros daily to Russia in order to heat houses and keep its industrial sector alive. It's important to note that Germany is the first economic power in the EU area, this means that by holding Germany, Russia is able to control a great part of the EU. Today Germany can't do anything but paying for natural gas to Putin, thus it can be inferred that it is indirectly funding the Russia army.

This displays a paradigm, because on one side it is sending military supplies to Ukraine (together with other EU nations), and in the meanwhile it cannot do anything but funding the Kremlin. We should keep in mind that Germany insisted many times on the fact that the sanctions imposed on Russia must not interfere with that gas supply.

This dependence of Germany on Russia dates to post World War 2 period.

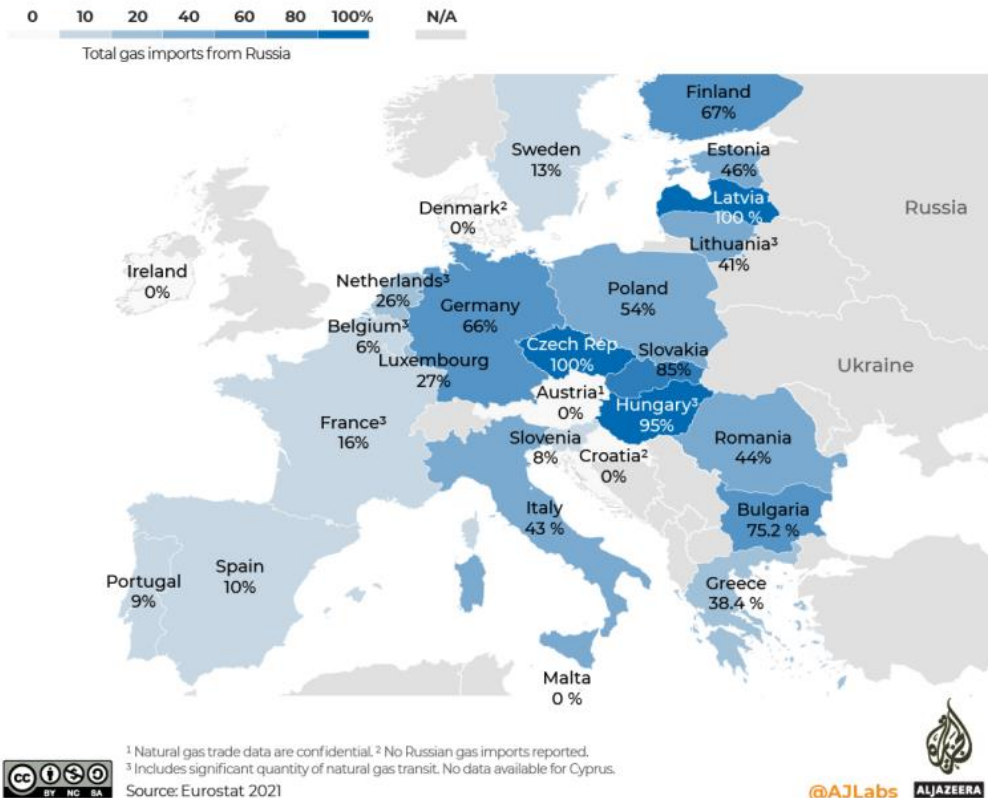
With the passing of time more and more Russian gas transited through these pipelines, making Germany solely rely on Russia. Today with the surge of war, Germany is in need of an alternative, but after spending this much (remember Nord Stream 2 costed 11 billion euros).

It's not easy to make another long-term commitment. Moreover, in 2011 Germany choose to shut down by 2022 all 17 nuclear plants it had, after a tsunami in Japan, caused the biggest nuclear disaster after Chernobyl. These plants back then used to produce a quarter of the total energy used in the country.

ENERGY

Russian gas imports into the EU

Russia is the largest supplier of gas to Europe which it uses to heat homes and generate electricity. In 2020, the EU received some 40 percent of its gas from Russia.



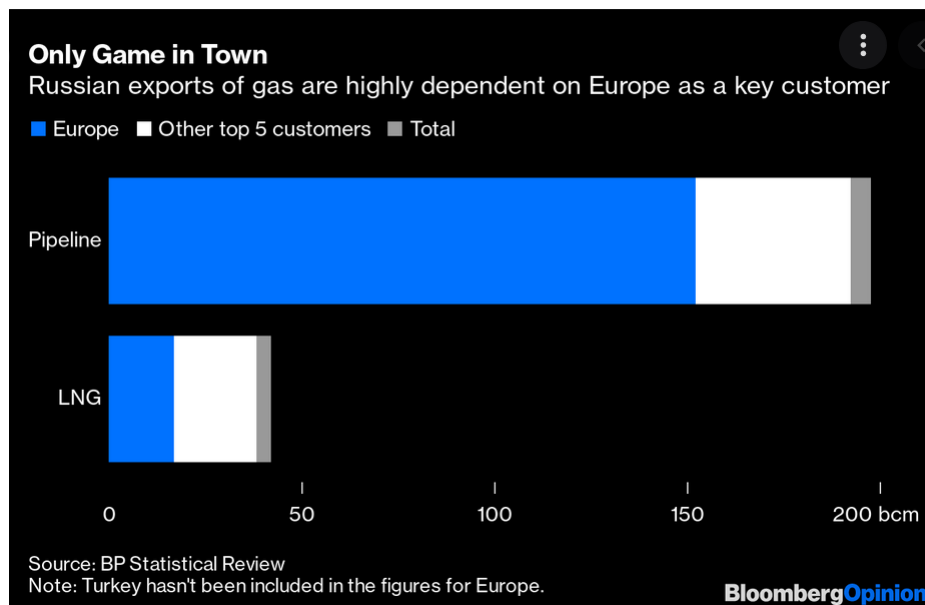
The share of Russian gas that meets European demand of natural gas was 30% in 2009, today about 47% of European imported gas comes from Russia.

1.7 Russia's need of having Europe as a client

Let us start with a consideration: energy imports from Russia, mainly concern fossil fuels. In the last years basically, all nations have developed plans to abandon the usage of fossil fuels as energy source. In the upcoming years, most of the countries will rely less and less on fossil fuels and thus Russia won't have the same demand it has now for its commodities so, the price of those will eventually shrink reducing Russian power and influence on the rest of the world. The transition to a greener economy tough requires lots of time and it can't be performed in a few years. This is the main reason why Europe finds itself in an unfavorable situation today. So, while the commodities are still in use, Russia has in its best interest to sell them when the

price is still high. Evidence of this, is that all the bombs launched in the Ukrainian territory never hit a single pipeline, meaning that it's also Russian interest to keep the gas flow active. Russia relies heavily on revenues from oil and natural gas, which in 2021 made up 45% of Russia's federal budget and about 30% of their GDP.

We can say then that the nation is dependent on these resources for sustaining its economy and today for financing the war. Thanks to its geography in fact, the nation welfare is maintained and many of its citizens have jobs. The dependence on commodities however makes Russia rely too much on their value: if the price of oil and gas is high, the Kremlin is able to sustain great expenses, on the other hand in periods which see price of commodities falling, their purchase power is affected greatly.



If Russia were to look for another customer to substitute Europe, China seems to be the option because of its size and geographic distance, so it would be the most reasonable option. The issue tough is that the two nations don't have any pipelines connecting them. Moreover, if this scenario comes to life, China would be able to ask a great discount for the commodities, since it would be the only buyer for such large quantities, paying a price well below what Europeans pay.

1.8 How can Europe diversify its natural gas supply⁵

Since the beginning of war, the EU has paid to Russia more than 20 billion euros for natural gas. The EU commission clearly stated that it wants to reduce this capital outflow to Russia, thus it wants to reduce its dependence on Russia natural gas supply by two thirds by the end of 2022. The plan involves shifting to energy sources other than gas and changing supplier for gas itself.

Western European countries are less dependent from Russia because they tend to rely on other importers. Some others instead rely on domestic production such as Norway (100% reliance on domestic production and UK (50%).

Last year we imported 155 bcm of natural gas, so let's see how where we can find some other options. To understand better the magnitude of these figures, keep in mind that total EU gas demand last year was about 400 bcm.

The fastest alternative to Russian gas is LNG which can be shipped through sea and re-gasified in appropriate plants: according to the EU commissions plan, this could replace 50 bcm of Russian natural gas.

- Renewables can replace 20 bcm;
- Another 10 bcm could come from exploiting the pipelines capacities already present to use Norway and Algeria production;
- 3.55 bcm could be replaced with biomethane which is obtained by fermenting food;
- 14 bcm can easily be cut by reducing the thermostat temperature of all European households by just one degree Celsius;
- 2.5 bcm can come from displaying more solar panels;
- 1.5 by doubling the number of heat pumps installed this year.

If we consider options that do not involve LNG, there's also the alternative of increasing the supply of natural gas (the final product) coming from pipelines. The possible suppliers are Norway, Azerbaijan, and Algeria. Norway has five pipelines which connect it to Germany (three), one to France and one to Belgium.

LNG presents the fastest solution for Europe; its plan in fact is to increase its share of global supply from 15% to a quarter. Since the war is affecting countries other than European ones

⁵See: <https://ig.ft.com/europes-race-to-replace-russian-gas>.

it won't be easy for us to race in this rush for LNG. Other than the competitors there are some other obstacles in the path for building a renewed energy supply chain.

Firstly, it must be understood that LNG has to undergo a process of re-gasification in order to be used and Europe's main plants that are used for the process are in Portugal and Spain (the two furthest west countries of European territory).

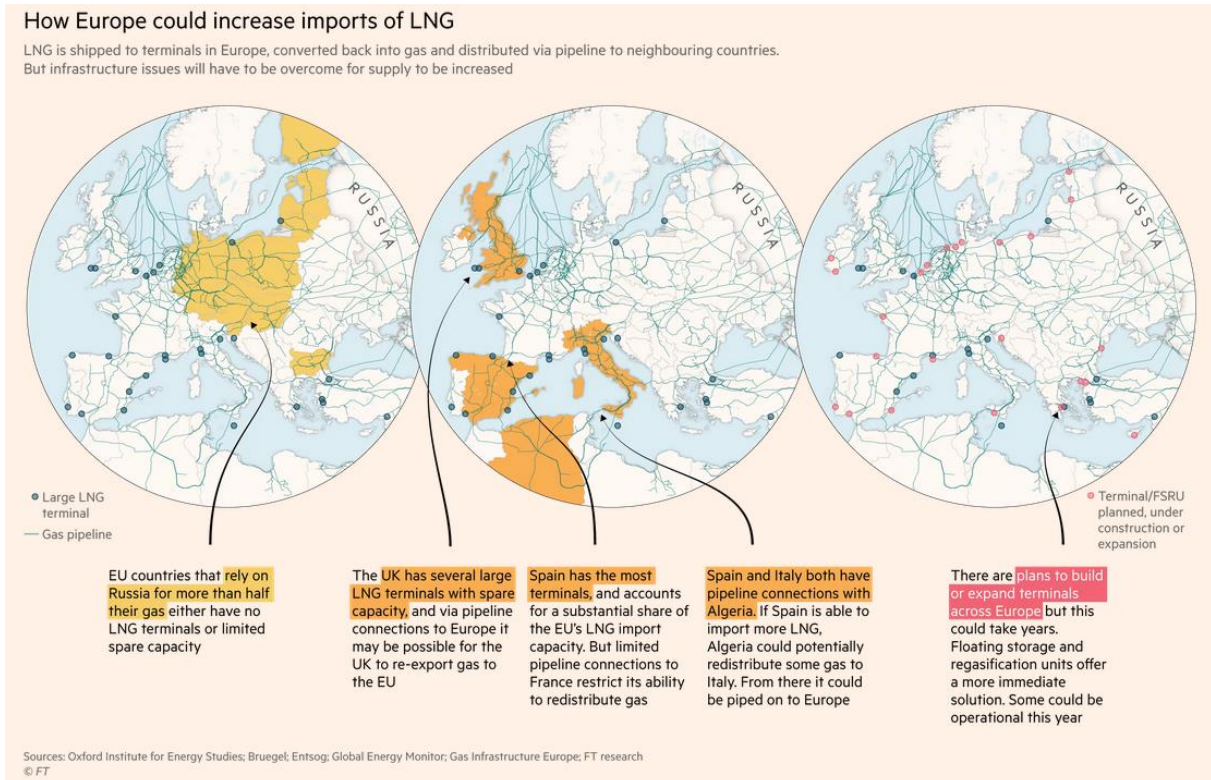
The re-gasified substance would have then to be transported across the continent. The point is that we don't dispose enough infrastructure to ensure every nation with adequate gas supply. Building new infrastructure is feasible mainly if we had to look at a greater time span since it would require both a long time to build and a great amount of capital, considering the immediacy of the need we have, I genuinely think that this path is not easy to achieve but is the safest option.

What is even more challenging is that the nations who are the most dependent on Russia for gas are the ones who have the less infrastructure to process the LNG, this is logical because if they didn't import any LNG, they had no need to build processing plants. Germany itself, who as I underlined earlier, is the most dependent, has zero facilities.

The UK represents a valid alternative since they have some facilities and would be able to re-distribute gas to Europe if they were in condition of receiving a greater supply.

Spain has the most plants but there's only one pipeline which is connected to France, which itself is one of the countries who is in less need of Gas since it uses nuclear plants.

Italy instead could play a key role, this because thanks to its pipeline connections with Algeria who is very rich in terms of gas, it would be able to redirect the gas to more northern countries. Geographically talking, Italy being at the middle of the Mediterranean sea is the middle ring of the chain which connects Europe and Africa. In general, the most feasible solution for EU countries is to build regasification plants rather than opting for the construction of a new pipeline network.



An alternative that is being discussed for the regasification process is to rent floating plants (ships) in order to be able to have the gas without the need to build new processing plants. This alternative though is not easy to be accomplished but surely it is more feasible than building a pipeline in the short term horizon.

1.9 Europe vs Asia on the rush for LNG⁶

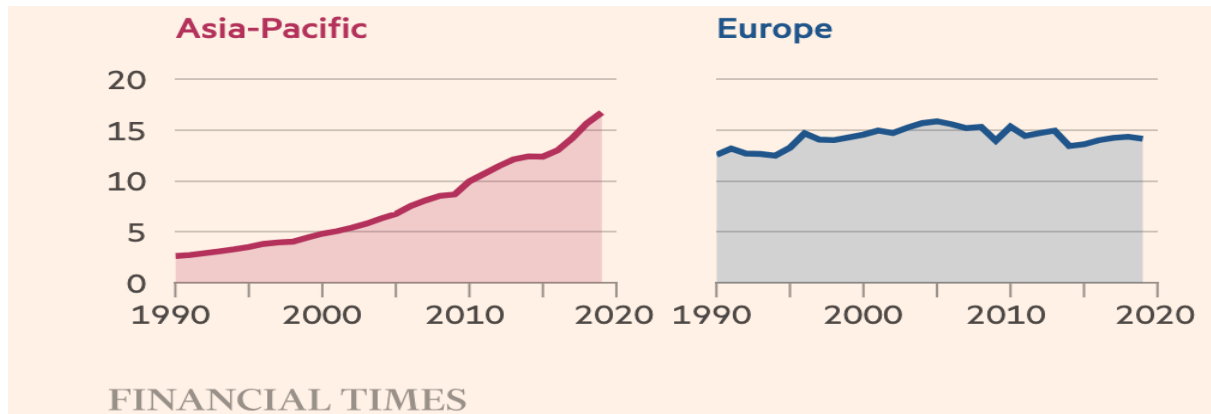
Being able to process new supply of LNG is an issue EU country must cope with but a more fundamental problem is being able to augment the current imports we have. Today a large share of import for LNG is held by the Asian market, for instance as we saw earlier Qatar is importing mainly to Asian markets. In 2021 the US redirected the routes of ships carrying LNG from Europe to China because the Chinese were offering a price double the one of Europe.

LNG can be imported from Qatar, USA (who have in their interest reducing Europe dependence from Russia), West Africa and Egypt. An issue concerning this is that energy markets, usually are negotiated with long term contract so a part of the supply is already taken,

⁶See: <https://www.eenews.net/articles/europes-scramble-for-lng-leaves-asia-starving-for-energy>.

while another is sold to the best offer. Basically the market is divided between Futures and spot deals.

In order to secure the non-fixed part we have pay a premium on the LNG, greater than our competitors who mainly are China, Japan and South Korea.

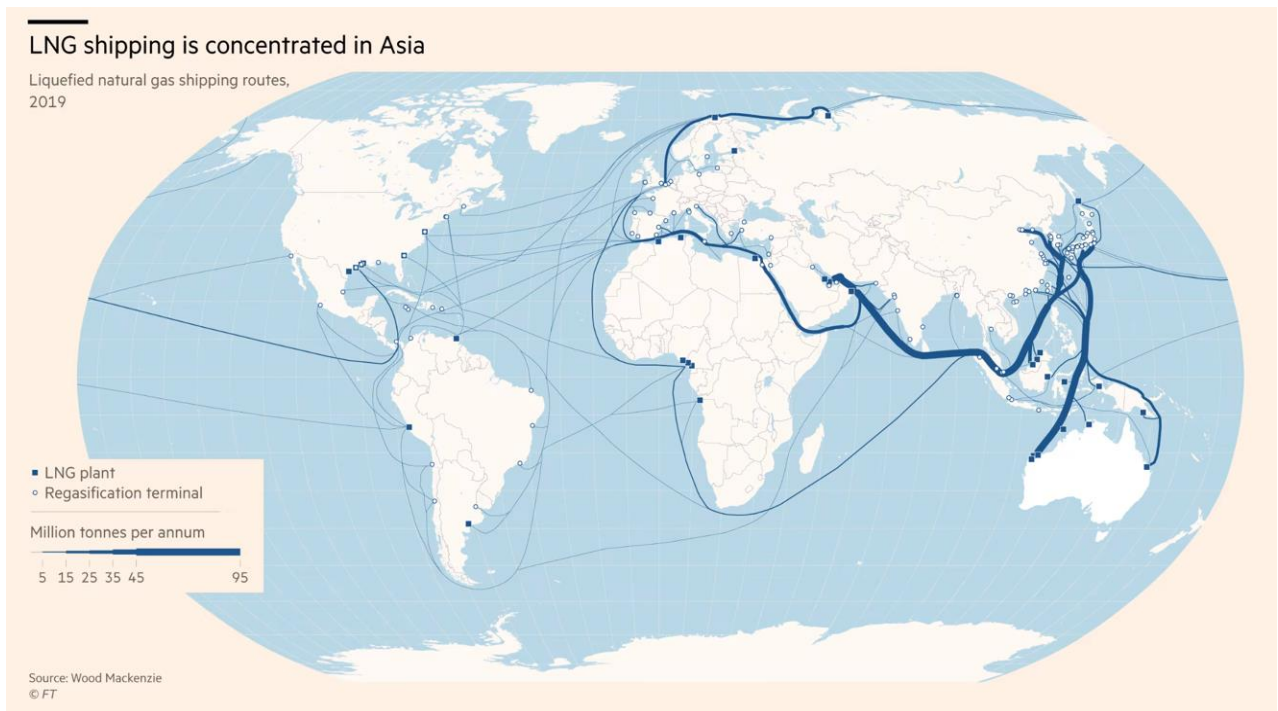


The table above shows how the two continents evolved the domestic demand for gas in the last 30 years: Asia has been growing exponentially while Europe has been stable in the gas usage.

The game that is being played between Asia and Europe for LNG is the main determinant of LNG spot price. The evolution of this relationship moves the equilibrium of the market, so let's see how the two continents approach the market respectively.

Many deals which involve LNG will be signed in the following weeks. Asian LNG importers are seeking long term contracts since spot price for gas has been increasingly expensive. Europeans on the other hand need someone to replace immediately a large volume of gas. If Asians can't secure long-term deals, at least in the short run they will eventually lose out from Europe; this because now Asians are not in such a rush for LNG.

South Koreans have recently announced an agreement made with US LNG suppliers, many other transactions are probably either not public or are still under discussion. Japan wants to move away from Russian gas and India too counting a large population is looking for spot deals.



As we can see in the representation above, Australia and Arabic have the largest routes to ship LNG to Asia, while the US mainly concentrates on the European market.

European and American leaders have been discussing about increasing LNG import in EU zone already before Putin invaded Ukraine.

The US being the leader nation of NATO, have in their best interest to obstacle Russia. So, it's a double entry win: on one side they help Europe to solve their dependence on Russia, on the other hand they gain a good customer who is willing to pay a premium for the product involved. Last month in fact, the US president Joe Biden promised to increase and keep stable LNG export to the European continent.

The Asian had a different approach from Europeans because they started stepping back when the price volatility had increased, moreover in 2021 the weather wasn't too cold; in fact, the gas import total volume of Asians was 10% lower than the one of the previous year. Asians recently switched part of the production of energy to coal and oil to ease the impact of volatile gas prices.

China which is a big player in the LNG market is the one who is more likely to be competing with Europe, this nation is also fundamental in determine total Asia gas demand because it accounts for 21% of world LNG import in 2021, since it imported about 110 billions of cubic meters.

South Korea since 2016 had been buying 15% of total US world export of gas.

China, Japan, and South Korea last year accounted for more than half of world LNG imports volume, but this crisis is expected to weaken Asian demand until mid-2020's.

1.10 The situation in Italy

This paragraph will focus only on Italy itself to understand better what the current situation is for what concerns gas and the future possible evolutions.

In order to see how the situation is developing and how it could turn out to be it's essential to understand first what kind of energy Italy uses and where it comes from.

In Italy 20% of the energy used comes from renewable resources, 33% from oil, 40% from natural gas and the rest from other smaller sources.

Moreover, about two thirds of the electric energy generated in Italy comes from thermoelectric plants that are run with the usage of natural gas.

Basically, Italy is in clear need of gas for the functioning of its economy since it relies heavily on it rather than on other energy sources.

The total Italian consumption of natural gas in Italy in 2021 was about 71 billion cubic meters, with 90% of that coming from imports.

Our main suppliers are Algeria (28%) and Russia (38%), way behind them we find Libya, Netherlands, Norway, and Azerbaijan. The remaining 13% came in form of LNG.

So, how could Italy find a solution in case the flow of Russian gas stops or lowers the intensity?

There are many options that can be exploited, it's important to note that since Russian gas has a big share in our energy sector, there's not a single solution but it's more a set of alternatives that shall be adopted to replace this possible Russian shortage.

Firstly, it's needless to say that the best option is renewable energy, but if we must be realistic the time needed to replace such a big volume of gas with renewable energy would leave us without heating systems for a few years.

Nuclear energy needs lots of time to build the plants as well, moreover it would be difficult to convince the population.

France who is adopting nuclear energy won't have the same problem we could end up facing.

So, what can be used for such an imminent need? Let's see in detail what is the composition of Italy's range of options.

1. Using the gas we have in stock, which amounts to 13 billions of cm³ can be a temporary solution of immediate use.
2. Buying more gas from other suppliers by signing new agreements. Mario Draghi as Italian prime minister visited in May and in July the Algerian government.
3. Augmenting imports of LNG from US and Qatar. The latter recently has been exporting larger and larger volumes to the Asian market, about 70% of its production. The US are trying to convince Asian governments to reduce their import from Qatar, so that this will be able to supply Europe as well.
4. Temporary re-opening of the coal-fired power plants.

In Italy there are 7 of this type of plants, but the Italian government announced the plan to completely abandon this source of energy by 2025 before the war began.

This energy source has a strong impact on the environment and re-opening all the plants can be seen as an involution for the Italian energy market; but if the choice is forced, this is still a valid alternative.

1.10.1 Recent developments⁷

In mid-July the Italian Prime Minister Mario Draghi visited Algiers to sign agreements with Algeria's government on the topic of gas. With these new deals, Algeria became the major importer of gas in the Mediterranean peninsula with an additional amount of 4 billion cubic meters (to be added to the 14 already erogated).

Algeria was chosen because of the existence of the pipeline named "Transmed" (Trans-Mediterranean Pipeline) which connects the two countries.

Italy achieved the objective of reducing its dependence from Russia but as today it didn't develop a full independence, analysts say that Italy still needs two years in order to have no imports from Russia.

⁷ See: <https://quifinanza.it/economia/gas-cosa-succede-se-putin-chiude-i-rubinetti/655776>.

1.10.2 Nuclear Energy in Italy⁸

Let's analyze what would be the scenario in Italy if we used nuclear energy. Italy had four nuclear plants that were all shut down by 1990 after a referendum. Today three of these plants can't be re-activated otherwise they would have probably (temporarily at least) been re-opened to face the shortage of gas we will encounter during winter.

This is mainly because the plants are very old and can't keep up with the new technology developments of the last 30 years. This is not the case for the plant in Emilia Romagna, which used a 2nd generation implant and had a lifetime expectancy of 40 years.

If that reactor would still be used, it could produce 2.5% of the Italian domestic demand of energy.

If we were to combine the energy production of the other three plants, we wouldn't be able to obtain half of the energy produced by one French nuclear reactor, this because they used a 1st generation plant. It's important to note that France has 56 nuclear plants and most of them use new technologies.

So how many reactors would Italy need to be completely independent from imported gas?

The gas used to produce electricity (nearly half of gas is used for that) would need 15 of the newest nuclear plants to be substituted while 24 of the old ones used in Italy.

What if we were to substitute only Russian gas?

Since we import almost half of our gas from Russia, the number of plants would be half in both calculations.

If we also count the possibility of using renewable energy for a part of the production of electricity, the needed reactors would become five.

It has to be counted however that the time needed to build a nuclear reactor would be five to seven years, so this shift can't be immediate.

To sum up, Italy would need 4/5 new generation nuclear plants and a time span of five to seven years to substitute Russian gas in the production of electricity and thus becoming fully independent from Russian imported gas.

This period of war will surely make the Italian government reconsider nuclear energy and new long-term plans energy of our country will be discussed.

⁸See. <https://www.youtube.com/watch?v=0SSDzDoyU8s>.

CHAPTER 2. SANCTIONS

2.1 Introduction⁹

After having explained how the energy market is evolving, its structure and its future scenarios, in this part of the thesis; we will analyze how some nations responded to Putin's invasion of Ukraine by giving sanctions to Russia. There will be a discussion about the reasoning behind these decisions, what do they mean both from a geopolitical and economic perspective. On the other hand, we will show how the Kremlin on its side responded to these sanctions, think that Russia has been fighting in Ukraine for more than four months now even if half of the world is trying to disrupt the attack. We will understand what the intended effect of the sanctions is and if they eventually happened to achieve their purpose. The majority of sanctions were imposed by the EU, but the US and Canada took part in many of them.

Since February, the EU commission has approved a total of six packages of sanctions with the purpose mainly of limiting Russia's economic activity so to create hardness to continue sustaining the war. The sanctions can target either individuals that with their behavior, political decisions and deals helped the war scenario to come into reality; or they can have a broader target such as slowing down whole Russian economic system.

Targeting individuals is important because Putin surrounded himself with people he knows well and could rely on. These people throughout the years became CEOs of energy companies, big multinationals which are a vital part in Russia economy and therefore in making political decision.

The most common tools in limiting the freedom of individuals are travel bans which do not allow wealthy and guilty Russian individuals to transit into foreign territory in order to escape from the climate of war. Moreover, since these oligarchs are very wealthy people who possess many real estate assets across the world, the EU decided to freeze these assets worth billions of euros. For instance, in Italy many houses in Costa Smeralda that are known to be held by Russians are now inhabited.

Lastly, all bank accounts held by Russian oligarchs in European and American banks are frozen and therefore inaccessible to them, making them unable to withdraw any funds from those multi-billion-euro accounts. This was done to prevent Russian oligarchs from coming

⁹ See: <https://www.consilium.europa.eu/en/policies/sanctions/restrictive-measures-against-russia-over-ukraine/sanctions-against-russia-explained>.

to Europe to find a safe place, and to prevent them from accessing funds that could be exploited to finance the war.

If instead we look at the sanctions that have a broader range of motion, an example can be found in the ban on imports and exports. The EU commission has designed a list of products that Russian firms are not allowed to export in Europe, in addition to this, we also find products that European firms are not allowed to sell to Russian customers anymore. Let's see more in detail what this latter sanction is about.

2.2 Ban on imports/ exports

This list is designed to make the Russians worse off by not providing them with goods they will have a hard time to find elsewhere. The European firms will have to find at least temporarily a new trade partner.

The EU commission's sanction forbids European firms to export in Russian territory all goods that could be used in a military environment such as drones, sea navigation pieces of technology and transportation equipment. Moreover, the ban on exports also concerns luxury goods and all products used for the extraction and transportation of energy.

On the other hand, the ban on imports of Russian goods concerns mainly energy, which as we know is the primary source of trade for Russia. The European consumers can't buy Russian commodities such as oil and its derivatives, wood, steel and iron. The toughest measure to be implemented for sure is the ban on oil, because it holds a good share of our energy sources. This ban was included in the last of the six packages of sanctions, and the plan is to implement it in the time horizon of six months from June 2022.

There's only an exception made for oil that is being transported via pipeline, this because as we discussed in the previous chapter, we find ourselves in a situation of dependence from Russian oil, but keep in mind that most of the oil and its derivatives is shipped by sea.

If we add up together all the sanctions on oil, they do cover about 90% of total EU import of Russian oil; this in fact is a massive change the EU commits to do and makes us understand how serious the EU is in the field of reduction of energy supply dependence.

2.3 SWIFT payment system¹⁰

The SWIFT system is a network which allows banks and other financial institutions to exchange relevant information and make money transfers in a secure way. SWIFT stands for “Society for World Interbank Financial Telecommunications”, and it is the largest platform used worldwide for international transactions.

So let’s see first how this system works: basically, every bank has a swift number that serves to identify the country, region and type of bank. This number appears when a transaction is being made, and if the two banks involved pertain to this system they don’t need to go through intermediary banks and therefore pay additional fees.

The system itself is not used for the actual transaction, it’s a messaging system that allows banks to recognize and communicate with one another.

The EU together with US, Canada and other states, decided to eliminate the access to this network to Russia and all banks which operate there. The purpose of these sanctions is to make the targeted banks partially unable to participate in the financial markets.

Today Russian banks can make international transactions without using the SWIFT system, but it is difficult since it requires mutual trust between the parties, and today it is unlikely that a bank wants to rely solely on trust when dealing with banks involved in such an unprecedented crisis.

A total of seven Russian banks had denied access to the system, these seven banks did not include Gazprombank and Sberbank which are two of the largest banks in Russia by assets.

In addition to this, it is important to note that there are other system similar to the SWIFT one, for instance Russia launched its own after the invasion of Crimea in 2014.

All transaction made by Gazprom which as we know is probably the largest firm in Russia do not use SWIFT and therefore this sanction didn’t affect it that much.

So why did these limitations only involve some and not all Russian banks?

The answer again is energy: since Europe needs to make transactions with Russia for energy, eliminating all banks would only worsen then a condition that is already critic for some of the European states.

¹⁰ See: <https://foreignpolicy.com/2022/03/08/swift-sanctions-ukraine-russia-nato-putin-war-global-finance>.

2.4 Foreign reserve freezing

Another sanction undertaken by EU, US and Canadian banks is freezing Russian foreign assets held at their banks.

We can clearly say that EU and US financially speaking are at war with Russia.

The Russian CB due to the impositions of EU commission, is unable to access its assets held in European banks and at the ECB which amounted to about 600 billion euro in 2022.

The result of this sanction is that Russia has many difficulties when conducting forex market operations. These foreign assets are assets owned by a CB but held in another country's CB, and they serve primarily to conduct foreign exchange operations.

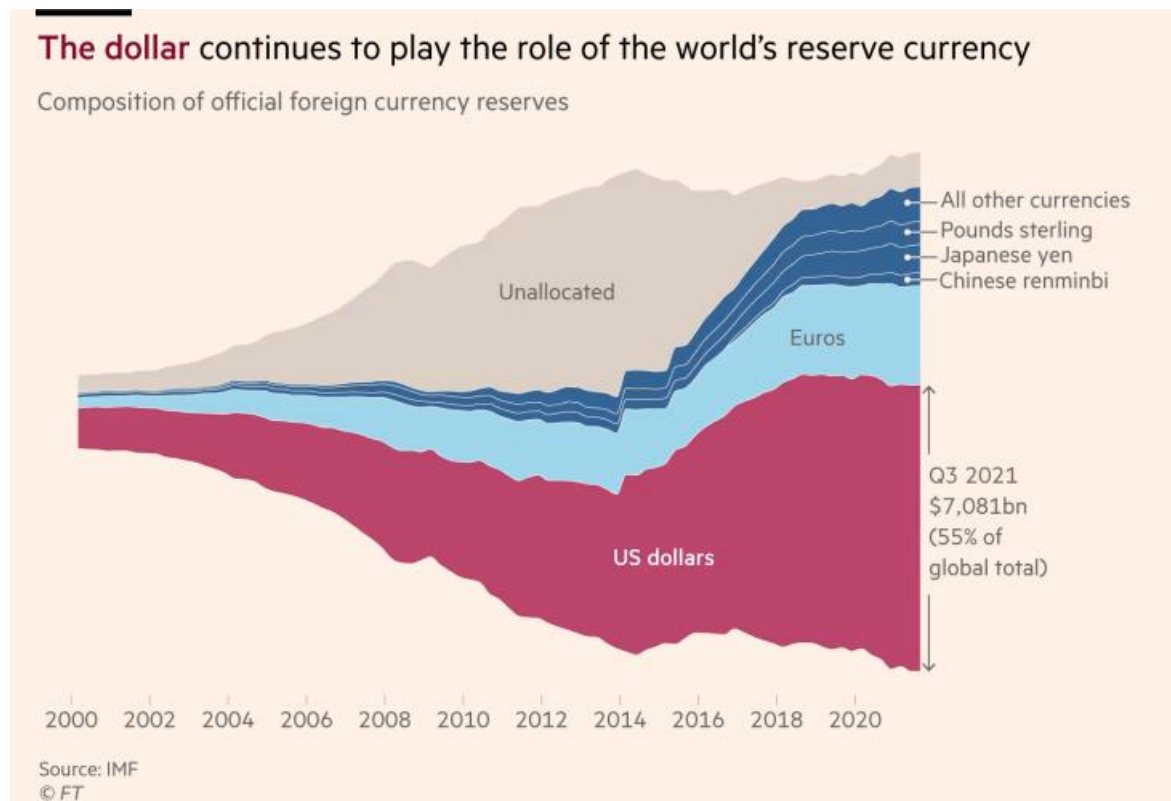
To understand the macroeconomic situation better, it must be said that the exchange regime of Russia is floating, meaning that its currency value is governed by supply and demand; this doesn't mean that the XR can move freely, in fact it is in the best interest of Russia CB to keep it around a target in order to make long term deals more reliable. Nobody would sign long term contracts denominated in a country that changes its value greatly every single month.

This basically means that the XR of Russian ruble is controlled by Russia CB, for instance when there's too much Russian ruble in the market, which would result in a depreciation of Russia's currency, the CB can sell foreign currency to the market in order to absorb his from it, therefore restricting the supply and making Russian ruble appreciate respectively to the foreign one.

To understand the magnitude of these sanctions, keep in mind that it is estimated that Russia held half of its reserves in European banks.

In addition to not being able to fully conduct FX operations, consider also that Russia's CB can't also dispose of these assets to help its banks to recovery from the other sanctions that have been imposed.

The table below shows the distribution of currencies used for foreign reserves, as we can see dollars and Euro amount to about 70% of world's total reserves. Not being able to display those currencies puts Russian policymakers in the position of not having a safe harbor to rely on in times of XR shocks, therefore conducting foreign exchange operations from now on will be both more difficult and expensive for them.



Not being able to buy foreign currency, can have some very severe macroeconomic consequences: if Russians aren't able to get their hands over foreign currency, they won't be able to import foreign products unless they're denominated in Russian rubles.

If all the transactions are made in Russian rubles, the Russian banks will see a great outflow of their currency and will not be able to repurchase it by exchanging it with foreign one. This will eventually result in improving the volatility of the Russian currency, meaning that the investors will be less and less likely to buy Russian currency or Russian currency denominated assets.

The greatest consequence of not being able to manipulate the XR, is that the country will have to change its spending habits: Russian ruble in fact has been appreciating in the last months, meaning that Russian have a great spending power for imports, while their export become too expensive for other countries. In my opinion, this situation will have to shift soon especially if Russia wants to restart its economic capability after the period of war.

2.5 Ban on transportation

Another method that is being used to reduce Russia's economic capability is making goods unable to transit over the UE territory to trade. This is detrimental to Russian exporters because not only Europeans won't buy some of their goods anymore, but also they have to design new routes in order to trade with other buyers outside the EU. The sanctions concerning transportation are divided into In-land, airline and maritime.

For what concerns the in-land transportation, all routes coming from Russia and Belarus are banned, except for some fundamental goods.

In the airline system instead, the planes are forbidden to enter the EU fly zone and land in any of the European airports, forcing Russian airlines to redirect the routes and therefore increase their costs. In addition to this, all European exports to Russia concerning space and airline industry have recently been stopped.

This sanction, should show some effects in a few months, this because about $\frac{3}{4}$ of the total Russian air fleet of commercial airplanes, comes either from Europe or the US. Russians will soon have troubles both when travelling outside their country but also within domestic flights. Maritime transport has its own limitation, in fact all European harbors are closed to Russian ships, except the ones carrying fundamental goods. Think that the Russian maritime fleet counts over 2800 vessels.

2.6 Ban on Russian broadcasts

The EU, decided to stop the broadcast of five tv Russian networks. This was done to prevent EU citizens from being misled by the information manipulation done by the Kremlin on topics regarding the war.

This measure is very serious, because basically the EU doesn't allow its citizens to hear how the war is being covered on the media of the opposing country. Everything that we know about the war comes from western media. In the world we live in: full of connections, immediacy and technological progress, Russia is being kept outside this bubble.

2.7 Are sanctions working effectively? How is Russia reacting?¹¹

Russian president Vladimir Putin, in mid-June communicated that the Russian Economy is doing just fine. Let's see if that statement respected the reality of facts or if the sanctions are actually hitting the Russian economic system.

The biggest weapon in the arsenal of Russia as we know is energy: in fact Putin responded to the sanctions by cutting off gas supplies to Europe. In May he cut off all supplies to Poland, diminishing by half the ones passing through Ukrainian pipelines and above all, he cut off 60% of the gas going through Nord Stream 1. After this action was taken, the price of gas spiked up.

This is easily understandable: Russia cuts off the supplies and therefore the price rises. Europeans now surely take into consideration moving away faster from Russian gas, hoping for a complete independence from Russia.

In that scenario, Russia couldn't benefit from the jump in prices because it wouldn't be able to find another large customer so easily. Putin however is aware of this issue, so he takes cautious steps when closing pipelines. For instance, he is threatening nations like Germany by cutting off temporarily the supplies by doing "maintenance" on Nord Stream 1, leaving them without the gas flow for some time.

Another countermeasure that is being discussed in Russia is to redirect temporarily the management of all foreign firms that shut down in Russia. In this way, all the workers would be able to keep their jobs, and together with them all the suppliers of those businesses would keep working and participating in the economic activity of the country. However, it has to be said that legally it would be difficult since the ownership is not Russian and the involved brands, would suffer from a damage of image. On the other hand instead, these firms would be able to generate revenue with no effort, which of course is a tempting choice.

In addition to this, Russia socially is more united to Putin. In a survey made by "Levada Center" which is considered the last independent institute of Russia, it was found out that the president reached a consent of 83% among the population.

This is because the citizens are feeling the effects of western sanction and therefore feel more united with Putin.

¹¹ See: <https://www.ilsole24ore.com/art/sanzioni-pesanti-ma-inefficaci-dilemma-che-arriva-dall-ucraina-AEukOfhB>.

CHAPTER 3. EFFECTS OF WAR AND SANCTIONS¹²

3.1 Introduction

So far, we have seen what the sanctions and countermeasures in this time of war were, let's understand more in detail then what is the effect of this war on businesses, households, on the financial markets and on some type of countries. Now it's the time to connect a war that is being fought on the battlefield by only two players with its broader range of effect on a multitude of countries and people.

The first consequence of this situation is having most of the western investors leaving all financial positions that are somehow related to Russia. The majority of the investors felt threatened by these sanctions and had to choose between facing uncertainty and holding their positions, or leaving them by liquidating their investments in Russian firms. At the beginning of 2021 in fact, according to Moscow exchange, foreign investors held equities worth \$86 billion.

London was the first market for Russian firms raising capital outside their borders, with about 40 listed companies which raised more than \$ 44 billion since 2005.

After the sanctions became real, most of that figure was disinvested. This is detrimental for Russian firms, if all the investors want to sell their positions, Russian equity and leverage become very cheap because the supply of shares for sell is high.

All firms then lose a good share of their market capitalization, especially small firms who needed to raise capital to be invested in the early stages of their career, today are unable to do so and therefore are unable to proceed. In order to contain this effect, the Russian CB passed laws that serve to formally delist some Russian corporations from foreign stock exchanges. The consequences of the Kremlin military choices will impact severely the Russian economy both this year and in the following ones.

This because Russia after the war is over, will have to find new trading partner, as most of the nations are working to reduce greatly their trading routes with it. On the other hand, due to all the spending, capital restrictions and trade bans, the GDP of Russia is likely to decrease, Goldman Sachs in fact predicted that the GDP will shrink by 10%.

When the war began, the Moscow stock market shut down for an entire month because the sanctions were impacting furiously the largest Russian corporations, after it reopened,

¹² See: <https://money.usnews.com/investing/articles/how-do-conflicts-and-war-affect-stocks>.

investors found a different market with the capital restrictions. Let's see then what are the scenarios and variables that an investor should keep in mind when trading during times of war.

3.2 Foreign debt crisis¹³

Russia in mid-June for the first time in this century entered a sovereign debt crisis, failing to pay \$ 100 million worth of interest payments even after a 30-day grace period, but what does that mean?

As we know countries borrow money for government expenditure by selling treasury bonds of different duration, the funds collected can be denominated both in local and foreign currency. After the period of duration, the bond expires and the money with the interest earned is transferred back to the investors. These assets are usually the safest ones since they bear usually low risk unless a country suffers from an extremely severe shock. If a country is unable to meet its foreign debt obligation, it basically means that the financial system of the country collapsed and thus that the country is in default.

All the bonds that didn't get the payment done we are speaking about are denominated in \$, and that's why the foreign reserves are fundamental to pay the obligations. These news though were expected by the majority of investors, since the sanction freezing Russia foreign assets made it almost impossible for Russia to pay the obligations, reducing their ability to raise capital and therefore of financing the war. This default is nothing but normal, this because Russia had both the economic capability and willingness to pay the outstanding debt, it didn't do so because it was stopped by a third party. We can just think about all the revenues Russia makes by exporting energy.

The Kremlin on its behalf stated that it tried to pay by transferring the money to an intermediary, but the capital was blocked by western states. Putin therefore to solve this issue, has signed a decree in which he commits to pay the interest in Russian rubles and not in United States dollars. As today, we can say that the sanctions achieved their objective, since now Russia has failed to meet its obligation, and therefore future investors will not be willing to buy Russian government bonds at least at the same price.

¹³ See: <https://www.ft.com/content/28817b4e-427c-44c1-88b4-38b79e3da7f0>.

In the next years, probably the Kremlin will have to pay a premium in order to sell its bonds counting on the fact that it missed this payment and that after the war it will encounter a period of economic recession due to the high spending it is doing in these months.

3.3 Russian ruble is experiencing appreciation¹⁴

Russian ruble has been performing well in financial markets this year, but how is it possible? Let's break down the main reasons behind this sudden increase in value of Russian currency with respect to the other currencies.



To read the table above, note that the XR is expressed as Russian ruble/1\$, meaning that the lower the number of Russian rubles needed to buy a United State dollar, the more the currency is appreciating.

As we can see in July the Russian ruble has seen its greatest appreciation against the dollar since last year.

The “jump” in value (it’s a strong depreciation) we see in the graph coincides with the time Russia invaded Ukraine, probably the market reflected fear and uncertainty of the investors due to the political, military and economic instability of the country.

¹⁴ See: <https://www.economicshelp.org/blog/168855/economics/why-russian-ruble-has-appreciated-after-sanctions>.

Firstly, it's important to note that having your currency appreciating might not always be a sign of having a strong performing economy. The basic reasoning behind this is that the more your currency appreciates with respect to others, the more spending power you gain on foreign goods (imports are cheaper).

On the other hand, if your currency appreciates to another, the foreign country will have less spending power on your goods (your exports become more expensive for the others). Russia now has a strong currency, but due to the ban on imports, it can't buy many foreign products, especially the ones used in the war; basically they have a strong tool that they're unable to use properly.

The ban on import/export played a great role in this scenario: this because if Russia can't import products, it has no way of injecting the Russian ruble by paying in the financial markets and therefore its supply remains almost unchanged. On the other hand, if it can't export, there will be no need for its customers to ask for Russian ruble in order to pay the Russian exports. If demand for Russian ruble in financial markets is low, and there's little way to inject it in the economy, the result is having a very low supply of Russian ruble in the economy. The currency therefore appreciates. So to make a good reasoning, shouldn't the price of a currency be low if there's low demand? Yes, but since Russia is able to keep trading energy such as oil and gas, which are two of the major components in its economy, the previously cited effect is offset by this.

Another reason for this appreciation is the capital controls imposed by Russia Central Bank of 80%. This means that 80% of all foreign revenues must be converted to Russian ruble, thus limiting the capability of Russian businesses to save in foreign currency.

Lastly the rise in interest rates: to attract foreign investors in fact, Russia's CB has risen the interest rates to 20%. When interest rates for a currency are high, there's a capital inflow because investors see a greater return. If people want to invest in Russia, they need Russian ruble so the demand for the Russian currency rises, and therefore its value goes up.

To conclude, now Russia possesses a strong currency in the market, but it isn't able to fully exploit its benefits. The fact is that a strong currency enables you to import more, but due to the sanctions Russia can't. If it can't import, it won't sell Russian rubles (inject domestic currency in the financial markets) to buy foreign one; thus, the supply of Russian ruble in the world economy will still be low. The ban on imports is basically what's keeping the Russian ruble value high, creating a vicious cycle for the Russian economic system as a whole.

3.4 Why does Putin want to be paid in Russian rubles?¹⁵

Putin has asked the hostile nations to pay him in Russian rubles for supplies of energy in a Decree emitted in late March 2022. The system should work in the following way: first Eu companies send money through Euro accounts to an intermediary, the latter will convert to Russian ruble and send the sum to Gazprombank (State owned bank), and only at that time the obligation will be considered fulfilled.

As we know, all commodities such as oil, gas and wheat are denominated in US dollars: this gives a huge advantage to the US on the economy. As we saw earlier, all nations hold reserves primarily of dollars because it's the most liquid and strong currency. So how could Russia benefit from obtaining Russian rubles instead of dollars?

If Russia starts being paid with Russian rubles, the demand for the Russian currency will grow and therefore it will experience an appreciation. In addition to this, since Russia holds a respectable share of world's energy market, it would be able to directly influence the trading system of such commodities. If Putin achieves the plan to shift commodities' denomination to his country's currency, the US investors will lose a great competitive advantage they have on other currencies. Having the price of a commodity denominated in your currency in fact, makes every other nation dependent on your currency value.

In this way, the Kremlin would be able to navigate through the European sanctions easily, it has to be remembered in fact that due to the dependence we have accumulated over the years, Europe is not in the position to negotiate with the Kremlin when speaking about energy.

The European commission is finding many troubles in addressing this issue: on one hand it clearly stated that paying with Russian rubles would be considered a breach of the EU sanctions, on the other it clearly knows that Russia cutting off the supplies because we don't pay in Russian rubles would potentially cause even greater damage.

There has been a lot of confusion, but the EU stated recently that European energy providers could open accounts with Gazprombank to pay with Russian rubles. We have also to consider that most energy contracts were already signed and valid, so the Russian asking for Russian rubles instead of Euro are completely breaching the contractual obligation they signed for.

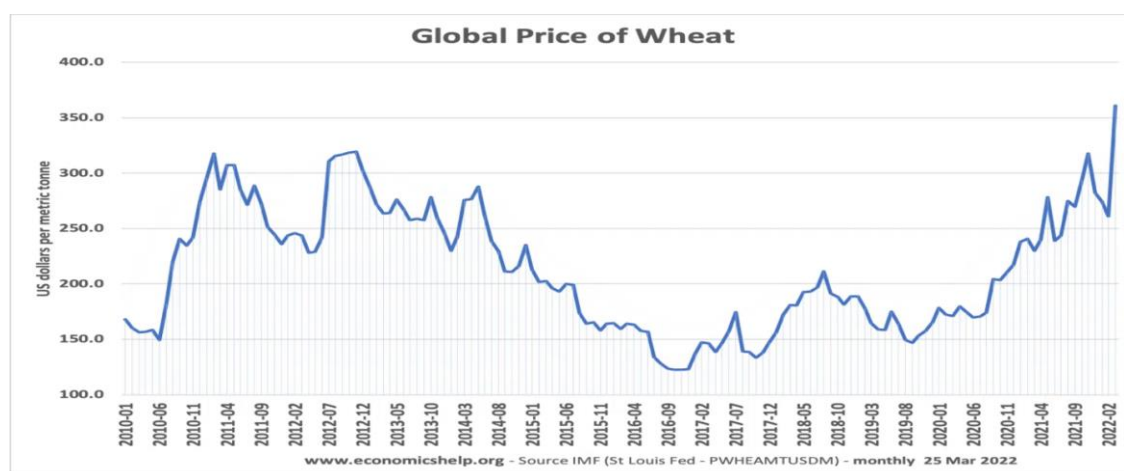
¹⁵ See: <https://www.bloomberg.com/news/articles/2022-04-29/why-putin-s-demand-for-rubles-has-europe-scrambling-quicktake>.

3.5 Effect on businesses: high wheat prices¹⁶

A wide variety of businesses have been affected by war directly or indirectly. Let us break down then which are the industries that have been affected greatly and the one who gained a competitive advantage from this conflict.

First, consider all the businesses who directly need the raw materials coming from the two countries involved as key part of their supply chain. One of the commodities which is involved in this conflict is wheat: Russia and Ukraine together account for 29% of global wheat production. It's logical to think that a stop/reduction of the production in these two countries will affect the price of the commodity globally. Their main trading partners are the Asian countries and Africa.

This ingredient is essential in many countries due to its wide variety of usages, so we can easily infer that a sudden increase in the price of such commodities would affect many food related businesses. Moreover there are some countries who rely for a heavy part of their consumption on the import from the two countries involved in the conflict such as Nigeria and Egypt.



As we saw above, higher wheat prices will cause firms who use it in their production process to incur in higher cost, which will eventually be reflected on the price of food. This phenomenon, together with inflation will cause a heavy damage on the shoulders on low income families. It must be considered however that change in final good (food) price depends on the industry involved, on the quantity of wheat needed for making the final product, on the fact that some retailers might have signed future contracts to hedge against this sharp increase in prices and on possible stocks. For instance, in Italy there are many firms which produce

¹⁶ See: <https://europa.today.it/fake-fact/speculazioni-grano-ucraina.html>.

and export *pasta*, in order to make pasta the most essential element is wheat. Since producers like Voiello, De Cecco, Barilla buy every year massive volumes of wheat they probably have already a good quantity of the resource in stock. Perhaps it is also likely that since their balance sheet is affected greatly by changes in wheat prices, they signed future contracts so that they agreed the price early on to hedge against a possible increase.

However, this war will shift the equilibriums in the market and eventually even the biggest producers will have to increase the prices, if this crisis is prolonged in fact all futures will be more costly as well so there will be no way to keep costs at pre crisis level.

3.5.1 Recent developments¹⁷

In mid-July thanks to the mediation of Erdogan, there was an agreement presented formally by two ministers respectively from Ukraine and Russia. This deal which has the duration of three months, allows the ships full of wheat that have been blocked into the ports of the black sea since the surge of war, to transit freely.

Twenty-five million tons of wheat have been reintroduced in the market officially, the first effect of the deal in fact was that the price went back to the pre-level crises. Erdogan helped the deal to be set because Turkey, due to its position is the one nation you must transit through when going from black sea to Mediterranean Sea.

Every ship which transits through this route pays a tariff to Turkey, therefore it helps the economic restart of the nation.

3.6 Impact of war on poor and developing economies¹⁸

So far, we focused on the changes and future developments of mature economies, now it's time to see what the war is causing in poorest countries and how it will affect its economies in the following years.

There are several factors related directly or indirectly to war which affect the economic outlook of these countries: high inflation, ban on trade, raising price of basic commodities, dollar appreciation. It's also important to note that many countries have accumulated debt to

¹⁷ See: <https://www.rainews.it/articoli/2022/07/accordo-grano-turchia-accordo-sul-grano-tra-russia-ucraina-partecipa-anche-lonu-87834229-95e7-4f8b-b2a6-acbcfa5065c9.html#:~:text=Kiev%20firma%20per%20prima.&text=L'accordo%20consente%20al%20paese,di%20esportare%20frumento%20e%20fertilizzanti.>

¹⁸ See: <https://www.ft.com/content/f09f4864-fc81-4dbd-8086-25e70ed01019>.
See also: <https://www.youtube.com/watch?v=7N-ly8SGtcY>.

face the pandemic and the sudden stop in the production lines, so this war came exactly when the countries were ready to fully restart their economic activity.

The World Bank last year said that due to the pandemic, about 100 million people were going to be pushed back or be in the first time under the condition of poverty.

To understand what we speak about, count that poverty means that an individual is living with less than 1.90\$ a day. It is easy to infer that with the conditions of the world we're living in, that number will surely rise.

Many countries in fact adopted a monetary policy with very low interest rates so that their businesses could restart by borrowing money cheaply as we know however this policy can't be sustained in the long run and most of those countries have already used the fiscal space they had.

It has to be clear that the main problem that the war is causing is lack of supply of basic commodities due to sanctions and destruction of production facilities which eventually results in higher prices. Now count that there are two scenarios for poor economies: whether the country is a net exporter or net borrower of such commodities like oil, gas and wheat.

A net exporter produces more than what it consumes, while a net importer produces less than what it consumes.

It's easy to understand that countries like Gulf economies (Saudi Arabia, Qatar, Yemen) who export heavily, benefited from this aspect of war because they ended up being paid more for the goods they sell.

On the contrary countries who mainly import their goods like Georgia and Poland, face an unprecedented crisis which makes them unable to afford the same volume of goods as before. To combat high inflation, many governments of advanced economies, adopt a contractionary monetary policy by setting higher interest rates and therefore put a break on the GDP growth (which is a growth caused by increased prices, not by greater production capacity).

This will make emerging markets worse off and make for them harder to repay their pandemic debt since it will be harder for them to raise capital.

Moreover, the majority of investors will move their investments to developed countries shifting from emerging markets and poor economies in order to look for safer investments in this period of high volatility.

3.7 Food crises¹⁹

The trend of growing global hunger started in 2014, as today more than 800 million people suffer from not having enough food. Last year the situation wasn't promising already because of the stop of global food supply chains due to COVID-19, the war only worsened a condition that was already problematic. Moreover, mind that climate change ruined many harvests in the recent years.

According to some estimates, the total volume of wheat and grain that Ukraine is not able to export because it's trapped inside the country amounts to the total consumption of the poorest countries for a whole year. This resulted in many countries as we know shifting their supply chains, but for African countries for instance going to Ukraine and going to Argentina or Canada is a whole different story, especially if they have to compete with the rich countries. The greatest impact of war was the inflation on fuel and fertilizers which are two of the main components used in the agricultural sector. The rise in cost of these, eventually is passed to the final consumer which finds himself with less purchasing power than before.

Some countries in order to face this shortage of food are applying export control and stockpiling, basically they're exporting less to feed their citizens and accumulating food to be at least partially protected from further increases.

In total 23 countries have strong food export restriction. This action can even make a country worse off, this because farmers might accumulate food while waiting the ban to be lifted so in the future they will be able to sell for a higher price; this can potentially result in having less domestic supply and eventually drive up the prices even further.

This whole challenge will probably be addressed by the IMF (International Monetary Fund) by providing these least developed countries with low-rate loans to allow them to import goods and restart the economic system. However, the fastest way to reestablish a reasonable. The World Bank announced that in 2022 it will make \$ 30 billion available so that price for these commodities, would be to put back into circulation at least Ukrainian wheat, but so far international negotiations weren't successful in doing it.

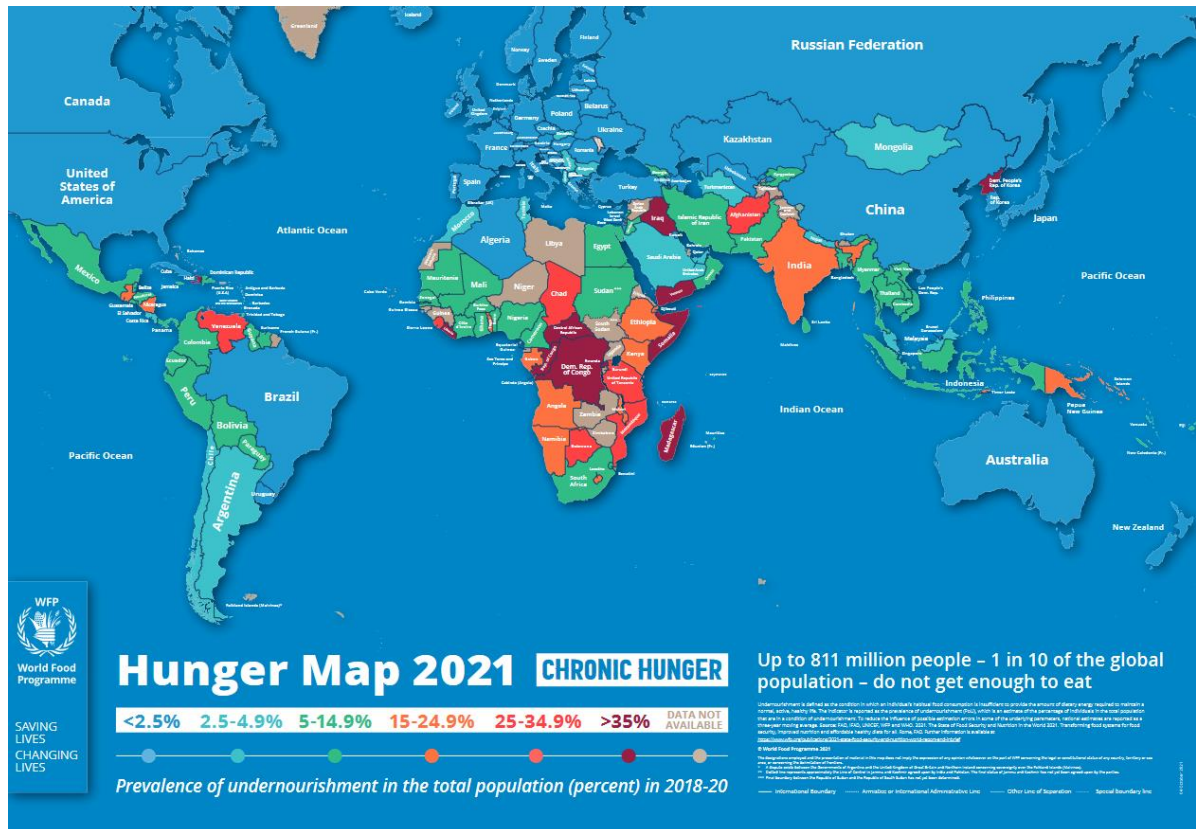
Moreover, this is a great advantage to Russia since it's able to influence indirectly many countries by having to fight in the battlefield just with one.

As the war brought into attention the fact that Europe is too dependent on Russia for gas import, hopefully it will also make clear that the world food supply is too dependent on only a few countries.

¹⁹ See: <https://www.youtube.com/watch?v=oQWaw5S4b3I>.

Ten countries only in fact are responsible for 90% of world import of basic food commodities. Any kind of shock that happens in one of these 10 countries will produce a chain effect which will result on having repercussion on both the exporter and all the countries who import the basic commodities form it.

Countries can become more self-sufficient in food production, but this is only one step to avoid another food crises.



Source: Food and Agriculture Organization of the United Nations (FAO).

3.8 How to invest in a time of war

So far during my thesis I analysed only the worse effects that war had, but it is important to keep in mind that even if the vast majority of individuals and corporations are worse off during and after a conflict, some industries benefit from this situation.

In general this period of extremely high inflation reduces the purchasing power of all individual consumers, but on the other hand some corporations see the value of their stocks growing since they're being paid more for their goods. This reasoning mainly applies to firms who sell essential commodities that consumers must buy on the everyday life. It's easy to

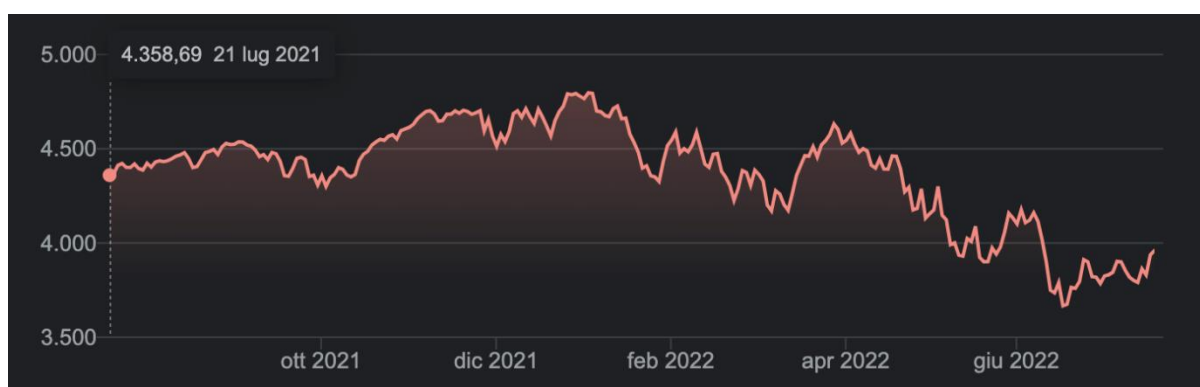
think that firms in the luxury industry are clearly suffering from the war because in this period of economic distortion their consumers have been greatly reduced.

In the first chapter when we analysed the possible ways in which Europe must shift its gas supply, we didn't consider the financial consequences of such course of action. Firstly, all the firms which belong to the green energy sector, are likely to greatly benefit from this period and the future, this because the need for a green transition has accelerated and therefore more and more investors will put their savings in those kinds of corporations.

Moreover, the corporations which are in the energy industry who transport gas, oil and fundamental commodities benefited greatly from this because they experienced a spike in prices for their goods, for instance ExxonMobil saw its profits increase by 100% while Chevron by 400%.

Another industry that clearly benefited from this war is the one of war related products: weapons, bullets, machinery, airplanes, drones, microchips. However, investing in times of war is difficult mainly due to inflation, and especially investors should be very picky when choosing where to invest.

Below is reported the table showing how S&P500 from march has been almost always steadily decline. This index has been chosen because it can be used as general indicator of how most important firms are reacting to this evolution. We shall keep in mind however that this concerns only US firms, and EU ones have surely been affected more than transatlantic ones.



Three companies which greatly benefited from the war and its subsequent spike in the price of gas are Vitol, Trafigura and Glencor, multinationals commodities trading, who trade energy commodities. Vitol (Dutch company) went from yearly revenue of \$ 140 billion in 2020 to \$ 279 billion in 2021.

Trafigura (Swiss) from \$ 147 to 231 billion and Glencor (Swiss) which went from \$ 142 to 207 billion.

Let's look now at ENI, the main energy supplier and distributor of the Italian peninsula.

Last year their balance sheet recorded a loss of 750 million euros (year of the pandemic), this year only in the first trimester, the company announced revenues for 2.1 billion euros. So how could such a firm have this many profits if the price of gas increased this much in this year? The answer is long term contracts, ENI in fact pays the gas at the same price as before thanks to the long-term deals signed about ten years ago with Gazprom. ENI earned so much that it chose to distribute dividends of 0.88 euro/share, giving their shareholders a part of their increased revenue. It's important to say that ENI by a third is owned by the state, meaning that the Italian government participates in the distribution of dividends as well. Moreover, the board of the firm choose to invest 1.1 billion euros in dividend buyback to make their share increase in the price favoring again its shareholders in case they would like to sell their stocks. Blackrock, which is a block holder in ENI, earned 116 million euros from the dividend distribution.

The EU commission has made an estimate of 200 billion extra revenue for the firms involved in the energy sector, advising the member states to impose an extra taxation on this kind of companies.

APPENDIX

Evolution of Russia-Ukraine relationship

In 1991, Ukrainian Parliament Speaker proclaimed Ukraine's independence from the USSR, which was later confirmed on August 24 by a referendum with a near-absolute majority of the population voting the independence. Ukraine formally joined the CIS, the Commonwealth of Independent States led by Boris Yeltsin.

Within a few months Ukraine was recognized by more than 50 nations.

However, the democratic transition was marked by dissent from the pro-Russian population opposed to the pro-Western population. The following years augmented the conflict between Russia and Ukraine with emphasis on the atomic arsenal present on Ukrainian territory and territorial disputes, the latter was the case for Crimea, which was granted the status of an autonomous republic by the new Ukrainian constitution, and the Donbass area where there is a substantial part of the population of with Russian origin.

In 2004, with the so-called "Orange Revolution," new presidential elections were called that proclaimed the victory of pro-Western President Viktor Juščenko, while in the 2010 elections pro-Russian President Viktor Janukovyč was elected.

In 2013, Viktor Janukovyč's Ukrainian government decided to suspend negotiations on a trade association agreement with the European Union, provoking popular reaction and fury from pro-European Ukrainians. Clashes lasting more than three months left thousands injured and dozens dead.

The agreement was strongly opposed by Moscow; Putin, stated at that:

“the sovereignty, independence and territorial integrity of Russia was a non-negotiable issue”.

In 2014, the Maidan Square uprising in Kiev broke out, forcing Viktor Janukovyč to give in and abandon the nation's presidency.

Putin's reaction was immediate: he put in Place a referendum demanding to the Russian population present in Crimea if they wanted to be independent from Ukraine and be annexed to Russia; at the same time Putin supported the Russian separatists present in Donbass.

Following the 2014 Russian-Ukrainian crisis, Crimea's pro-Russian government, after a referendum on the peninsula's self-determination, promulgated the peninsula's independence from Ukraine and its formal accession to Russia.

This accession was not recognized by the vast majority of the international community.

In this regard, the European Council in a June 21, 2021 press release explicitly stated that:

“The EU does not recognize the illegal annexation of Crimea and Sevastopol by the Russian Federation and continues to condemn this violation of international law”.

The Russian/Ukrainian crisis deepened further with the separatist movements present in the Doneck and Lugansk territories in the Donbass region.

From the Russian perspective, the openness of Europe and NATO, ready to consider the Ukrainian application for membership further exacerbated the issue both geopolitically, strategically and emotionally as the possibility of permanently losing Russia's strong influence over Ukraine loomed.

Six years have passed since the opening of Europe and NATO to independent Ukraine and Putin's intended aggression in February 2022.

This factor underscores the difficult relationship of Russia with Ukraine and Russia with the West.

The role of Vladimir Putin

In March 1999, according to French journalist Piotr Smolar Balkan correspondent for "Le Monde," an event happened that can help us understand something about the issue of the current war.

A plane carrying Russian Prime Minister Evgenij Primakov bound for Washington D.C. suddenly reversed course and returned to Moscow. At the time, Russian Prime Minister Evgenij Primakov had received a phone call from then U.S. Vice President Al Gore simply informing him that the U.S. was launching an air raid under the NATO flag in Serbia and Kosovo to protect the Albanian and Muslim population without a U.N. Security Council resolution authorizing the operation.

At that time, Russia ruled by Boris Yeltsin was a nation facing a severe domestic economic crisis, a staggering foreign debt, and seemed to have no international relevance.

The internal crisis led to Boris Yeltsin to abandon the presidency, he was later replaced by Vladimir Putin who was then prime minister and unknown to the world public at large. It was not possible to imagine that he would remain in power such a long time.

1999 to 2000	Prime Minister
2000 to 2008	President of the Russian Federation for two consecutive terms.
2008 to 2012	Prime Minister
2012 to 2018	President of the Russian Federation
2018 - present	President of the Russian Federation
	23 Uninterrupted years in power

In the summer of 2001 with Putin president for six months now, the West slowly began to get to know him through a series of meetings with European leaders and of the BRIC, the holding of the XXII Winter Olympics in 2014 and the 2018 World Cup.

The 2003 U.S.-Britain aggression against Iraq, an aggression built on information accusing Saddam Hussein of possessing chemical weapons of mass destruction that later proved to be untrue, reinforced Putin's belief that it is the "strong" states that determine what the truth is, which can also be accomplished starting from nonexistent data as in this case.

In 2004, five years after the annexation of Hungary, Poland and the Czech Republic to NATO, as many as seven nations joined: Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia and Slovenia. It is worth recalling that in February 1990, then U.S. Secretary of State James Baker assured Gorbachev that with the reunification of the two Germanys, NATO's territorial limits would not flood one inch.

In his speech at the Munich Security Policy Conference in 2007 Putin stated.

“Today we are witnessing the virtually unlimited and exaggerated use of force in international affairs - military force, force that is plunging the world into the abyss of conflicts” and that “It is a world in which there is one master, one ruler.”

In 2008, at the Bucharest summit of the Atlantic Alliance, a political declaration was adopted in which it was said that, in time, Ukraine and Georgia might join NATO.

Following these statements, Putin declared that Russia would legitimately defend its interests in Ukraine where a substantial Russian-speaking community lives.

Also in 2008, following Georgia's invasion of South Ossetia and Abkhazia, Putin ordered an invasion of Georgia in support of the separatist regions.

The war lasted only four days; after the armistice, which provided for the withdrawal of the two armies, Russia kept its troops stationed in the region, violating the principles of the armistice that he had just signed.

The Russian leader, then prime minister, harshly criticized the 2011 NATO intervention in Libya, an intervention carried out without the approval of Russia, a permanent member of the UN Security Council.

The following year, in 2012, Putin once again became president and decided to help Syrian satrap Bashar al Assad accused, among many crimes, of using sarin nerve gas against insurgents.

In 2013 Moscow pressured the Ukrainian president to suspend signing a trade agreement with the European Union, triggering popular fury among pro-European Ukrainians.

In 2014, clashes among the Ukrainian population flared up again, this time in Maidan Square and later led to the resignation of President Viktor Janukovyč: clashes that lasted more than three months left thousands injured and dozens dead.

At the time, Victoria Nuland, appointed Assistant Secretary of State for European and Eurasian Affairs by Barack Obama, was in Kiev.

In a telephone conversation she had with the U.S. ambassador to Ukraine, Geoffrey Pyatt, later leaked to the media, Nuland expressed, in a rather crude language, the North American intention to keep the EU on the sidelines of the Russian/Ukrainian crisis:

“So that would be great, I think, to help glue this thing and have the U.N. help glue it and you know ... fuck the EU”.

In 2014 and 2015, the “Minsk Agreements” were signed, which provided for an end to hostility between Ukraine and the separatists of the Donetsk People's Republic and the Lugansk People's Republic, which after a referendum proclaimed themselves independent from Ukraine.

These two republics have not been officially recognized by the majority of the international community.

In 2017, Donald Trump was elected president of the United States; at that time there were allegations that were never denied and never proven of Russian government interference in the election so that the Republican candidate would win.

Beginning in 2020, Moscow intensified accusations against Kiev of non-compliance with the "Minsk Accords." In that year, Putin's regime opponent, Russian Alexei Navalny is poisoned. Putin merely states that if he had been involved in the Navalny operation, Navalny would not be alive.

In 2021 Joe Biden is elected 46th president of the United States.

If Trump, speaking of Putin, had said:

"You know, he was a friend of mine," and "I got along great with him".

Joe Biden in an interview with the ABC network's "Good Morning America" program said that Putin *"will pay a price"* for his efforts to undermine the 2020 US election following a landmark American intelligence assessment which found that the Russian government meddled in the 2020 election with the aim of *"denigrating"*.

The interviewer asked him if he considered Putin a killer he replied *"Mhmm. I do"*.

In this regard it is worth mentioning that the counterintelligence of the UK, France, the Netherlands have openly accused Moscow of interference in the internal affairs of their respective countries. It is a fact that Putin has helped in the election campaigns of Italy, the United States, France, Brazil.

The storming of the Capitol by Trump's supporters in 2021, the withdrawal of troops from Afghanistan in 2021 after 20 years of occupation, present an America not in full health, led by an old man; such facts did not go unnoticed by Putin, who as early as 2007 missed no opportunity to point out the "decadence of the West."

The West, after the invasion of Ukraine, seems to have regrouped to deal with threats from Russia.

Presumably, in order not to go down in history as the man who lost the empire for good, President Putin has unleashed a war with the intention of returning Russia to its territorial dimension as an empire, which, since Peter I the Great, has been one of the reasons that allows Russia to play its role as a great power, able to sit at every negotiating table on an equal footing with the United States and China.

Currently, in the distribution of the weights of the sphere of power and influence among these three powers, Russia seems to have the least weight.

BIBLIOGRAPHY AND WEBSITE LINKS

- BELLEZZA Simone Attilio. *Il destino dell'Ucraina. Il futuro dell'Europa*, Brescia, Scholè, 2022.
- BRZEZINSKI Zbigniew. *Between two ages: America's role in the technotronic era*, New York, Viking Press, 1970.
- . *The Grand Chessboard: American Primacy and Its Geostrategic Imperatives*, New York, Hachette Book Group, 1997.
- IACOBONI Jacopo. *Oligarchi: Come gli amici di Putin stanno comprando l'Italia*, Bari, Laterza, 2021.
- MACHIAVELLI Niccolò. *Il Principe*, Novara, De Agostini 1966.
- . *Discorsi sopra la prima deca di Tito Livio*, Novara, De Agostini 1966.
- MOSCATELLI Orietta. *P. Putin e Putinismo in Guerra*, Roma, Salerno editrice, 2022.

ECONOMIC MAGAZINES

- “Forbes”. <https://www.forbes.com>
- “The Economist”. <https://www.economist.com>

ECONOMIC NEWSPAPERS

- “El Economista”. <https://www.eleconomista.es>
- “Financial Times”. <https://www.ft.com>
- . “War in Ukraine” <https://www.ft.com/war-in-ukraine>
- “Il Sole 24 Ore”. <https://www.ilsole24ore.com>
- “International Business Times”. <https://www.ibtimes.co.uk>
- “Lavoce.info”. <https://www.lavoce.info>
- . [Dossier guerra Russia-Ucraina - Lavoce.info](https://www.lavoce.info/dossier-guerra-russia-ucraina).
- “The Wall Street Journal”. <https://www.wsj.com>

GEOPOLITICS MAGAZINES

- “Limes”. La Russia cambia il mondo, febbraio 2022.
- . La fine della pace, aprile 2022.

INTERGOVERNMENTAL AND GOVERNMENTAL ORGANIZATIONS

- Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile (ENEA). <https://www.enea.it>

European Environment Agency (EEA). <https://www.eea.europa.eu>

Food and Agriculture Organization of the United Nations (FAO)

<https://www.fao.com>

International Energy Agency (IEA). <https://www.iea.org>

____. Gas Market Report, Q3-2022 (windows.net).

____. World Energy Outlook 2021 (windows.net).

Istituto Affari Internazionali (IAI). <https://www.affarinternazionali.it>

United Nations (ONU). <https://www.onu.org>

MAGAZINES

“Il Mulino”.

“Internazionale”.

“The Nation”. <https://www.thenation.com>

NEWS AGENCIES

Al Jazeera. <https://www.aljazeera.com>

ANSA. <https://www.ansa.it>

Associated Press. <https://www.apnews.com>

BBC. <https://www.bbc.com/news>

Reuters. <https://www.reuters.com>

Russian News Agency TASS. <https://tass.com>