The European Union oil dependency: a threat to economic growth and diplomatic freedom

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Abstract
Purpose – This paper provides a general review of the current energy dependency of the European Union (EU) and the possible threat that it poses to economic growth and diplomatic freedom.

Design/methodology/approach – Systematic literature review with a narrative approach to analyze historical data, statistics and energy policies and determine if the EU oil dependency represents a threat to economic growth and diplomatic freedom. In addition, a review of the US policy “America first” is also included to analyze its impact on the EU.

Findings – The energy dependency rate of the EU increased 12 percentage points from 1990 to 2018. Russia has become the largest oil supplier for the EU tripling Norway, the largest supplier in the 1990s. The oil dependency of the EU on Russia is a difficult situation where guaranteed energy supply and diplomatic freedom becomes a national political controversy. Even though the USA is currently a top world exporter of oil, the EU does not rely on the USA. The findings suggest that the EU needs to secure a reliable energy supplier to guarantee economic growth, reduce energy scarcity and enhance diplomatic freedom.

Originality/value – This paper provides a historical examination of the EU oil dependency considering its impact on economic growth and diplomatic freedom.

Keywords Oil dependency, Economic growth, Political stability, Diplomacy, T-TIP, International trade, Regulation, Policy, Systematic review, Energy sector, Descriptive analysis, General review

Paper type General review

Introduction
Energy, both natural gas and crude oil, are scarce natural resources. When the price of these resources fluctuates, it affects world economies, influences politics and social agendas. In the 20th century, economic development and progress brought a major shift in energy usage and in the 21st century, economies shifted towards natural gas and crude oil. Thus, the world dependency on this commodity began. The end of 20th century saw the preeminence of petroleum [1] as the main energy source. The 21st century could experience a major shift from fossil fuels to more efficient fossil fuels and clean energy. Evidently, economic growth and political stability during the 20th and 21st centuries have been linked to the access, availability and supply, or lack thereof, of crude oil.

An analysis of the historical data published by Eurostat (2015) revealed a sustained increment of the energy dependency rate since 1990. The European Union (EU) has
incremented its dependency on oil suppliers such as Russia, which means that the EU is losing diplomatic power to face those countries. The future is clear for the EU that has to find oil suppliers closer to the European political, social and economic interests, and promote the development and adoption of sustainable and clean energy. The EU must satisfy its energy consumption while strengthening its national sovereignty and security.

Considering the findings mentioned above, this paper aims to answer the following research question: Does the oil dependency represent a threat to economic growth and diplomatic freedom to the EU? To answer this question, the paper provides a general review, which is a “critical evaluation[s] of material that has already published” (Bem, 1995, p. 172) that identifies and synthesizes the findings to answer the research question.

The paper presents a thorough literature review which becomes the pillar upon which rests the structure of our research in six parts. In the first part, we briefly explain the research methodology followed in this paper. The second part presents a historical overview of the importance of the energy market for economic growth and political stability. Third, we analyze of the energy dependency of the union and present the importance of breaking this dependency and work to end energy poverty. Fourth, we highlight the notion that the EU is at a crossroads because it has not been able to sign a treaty with the USA to guarantee energy supply and continues to rely on Russia. Fifth, this paper refers to the US experience to demonstrate the importance of energy independence and to argue that the EU must become energy self-sufficient to guarantee economic growth, political stability and diplomatic independence. Finally, we conclude by evaluating the contribution of this paper to the literature.

**Research methodology for this study**

This research follows the systematic literature review methodology that has been widely used in evidence-based medicine but also in other engineering, social and business sciences (Merli et al., 2017; Vasco da Silva and de Brito, 2019; Agrawal et al., 2015; Bon-Gang, 2018; among others). Nightingale (2009) explains that a systematic review aims “to identify all studies (published and unpublished) that address a specific question and their methodology has been developed to minimize the effect of selection, publication and data extraction bias” (p. 381). By using this method we avoid potential bias and limitations during the research process (Tranfield et al., 2003), while ensuring the reliability and robustness of the analysis and providing a transparent and replicable selection process of the literature and data used (Denyer and Tranfield, 2009).

The review process of this research followed Tranfield et al. (2003), Mayring (2002); Xiao and Watson (2019); and others. First, this research formulates a clear research question (see the Introduction). Second, we delimited and defined the data collection to help us present a descriptive analysis of the data of the specific unit of analysis that allowed us to compile evidence and answer the research question (see parts 3, 4 and 5).

Our data collection process followed the principles for systematic reviews that Denyer and Tranfield (2009) suggest that are transparency, inclusivity, explanatory and heuristic. We carried out our data collection through the open official sources from the EU and widely recognized international newspapers. For example, we did not differentiate sources commonly classified as “conservatives,” “rightists” or “leftists,” because including the most sources as possible contributed to the more transparency and inclusivity, which helped to avoid selection and judgment biases. We also used basic descriptive statistics to analyze the trends, all these of easy access and replication.

Compiling all this information allowed us to follow Pawson (2006) and generate an explanatory synthesis. In this way, parts 3, 4 and 5 provide a reliable explanation of the
findings, summarize the body of evidence and allow obtaining a heuristic output (part 6) following the narrative approach, defined as “a frame of reference, a way of reflecting during the entire inquiry process, a research method, and a mode for representing the research study” (Moen, 2006). Denyer and Tranfield (2009) explain that systematic review studies do not provide “a detailed solution to a specific problem” (p. 681) but “rules, suggestions, guides, or prototype protocols that may be useful in making progress toward a solution of a problem” (p. 681).

Energy market: economic growth and political stability

In this part, we revisited the literature about the relationship between the energy market, the economic growth and political stability. Nadler (2018) shows that electrical rate has an impact on political stability, and Haynes (2016) determined a relationship between the supply of energy and resources, and economic and political stability. Farhani and Rahman (2020) found that there is a causal effect between gas consumption and economic growth in France and between energy and economic growth in Croatia (Vlahinic-Dizdarevic and Zikovic, 2010). In addition, Dey (2019) shows strong evidence of bidirectional causality in Bangladesh between the consumption of electricity and incomes. However, Alqahtani and Taillard (2020) found that shocks in the global political risk do not have significant impact on oil prices.

A historical analysis of the West Texas Intermediary (WTI) helps graphically determine the effect of wars or conflicts on price (Figure 1).

For a better understanding of the historical evolution and relationship between energy market, economic growth and political stability, History reports that “On July 26, 1941, Franklin Roosevelt seizes all Japanese assets in the US in retaliation for the Japanese occupation of French Indo-China” (2009). Britain and the Dutch Indies followed suit, which resulted in Japan losing access to 88% of its imported oil putting Japan in a situation that

![Figure 1. West Texas Intermediate Price](image)
eventually led to war. On October 1973, the world experienced the so-called First Oil Crisis, which sparked a profound economic recession as the supply of crude oil decreased and the price of oil increased from less than US$10 a barrel to about US$40 a barrel measured in today’s dollars (Hamilton, 2011). At that time, members of the Organization of Arab Petroleum Exporting Countries decided to stop shipping oil to the countries that supported Israel in the Yom Kippur War against Syria and Egypt (OPEC, 2015). On January 1979, political unrest in Iran led to the Shah’s resignation leading to the Second Oil Crisis. These events cut production from 6 million to 1.5 million barrels per day, and prices skyrocketed from US$40 to US$80 per barrel in today’s dollars (Yager, 1981). Finally, the Iraqi occupation of Kuwait – the Gulf War – from August 1990 to February 1991, led to yet another spike in the price of oil.

The 21st century started with several wars that ultimately affected the price of crude oil. Operation Enduring Freedom in 2001, the price of oil increased until December 2007, when President Barack Obama withdrew US military forces from Iraq. Curiously, the National Bureau of Economic Research (NBER, 2008) reported:

A peak in economic activity occurred in the US Economy in December 2007. This peak marked the end of the expansion that began in November 2001 and the beginning of recession (p. 1).

Furthermore, the world experienced a number of revolts that affected the international price of crude oil such as the Arab Spring or Democracy Spring in the Middle East, civil unrest in Tunisia (2010) that spilled over to other countries in the Arab world. During this tumultuous time, the price of oil spiked in just two months from about US$84 to approximately US$115 a barrel. Finally, the recent geopolitical controversy with Russia over Crimea shows how energy supply and prices affected economic and political relations between the EU and Russia.

The end of the cold war and the demise of the Soviet Union led to the birth of modern Russia. Since 1999, Vladimir Putin has been in charge of reconstructing the country and forging a new area of influence along with former Soviet republics. The BBC (2014) reported that in August of 1999, Putin declared that Russia:

Has been a great power for centuries and remains so. It has always had and still has legitimate zones of interest abroad in both the former Soviet lands and elsewhere. We should not drop our guard in this respect, (and) neither should we allow our opinion to be ignored.

Putin has been working hard to organize the “Eurasian Union” to integrate the Customs Union launched in January 2010 between Russia, Belarus and Kazakhstan. This union has been part of Putin’s grand vision to bring Russia's former Soviet neighbors back into the fold and to rival the economic and political influences of the EU, the USA and China. The agreement that established the Eurasian Economic Union in 2014, expanded by the inclusion of Armenia on 2 January 2015 and Kyrgyzstan on 6 August 2015, terminated the Customs Union (Eurasian Economic Commission, 2015a, 2015b).

From 2013 to 2017, the USA and the EU were working on the Transatlantic Trade and Investment Partnership (T-TIP), which the intention to be more than just a trade and investment agreement. The T-TIP aimed to change world politics. Secretary of State Kerry (2015) said the T-TIP would:

[R]einforce our common effort to counter violent extremism, support the sovereignty of Ukraine, build energy security and independence for many nations in Europe that currently must rely on one source – Russia, and it will help us address such global problems, such as nuclear
proliferation and climate change. That’s what comes out of this kind of cooperative effort and the growth that it will spur. This statement highlighted one of the most pressing issues affecting the EU: the dependence of EU countries on only one energy supplier, Russia. This energy dependency has caused serious diplomatic confrontations and affected the supplies of energy.

However, as drafted and negotiated, the T-TIP did not specifically address the topic of energy. Had the TTIP addressed the topic of energy, it would have brought the EU and the USA closer together to work on securing energy supplies.

**The European Union energy dependency: a brief review**

The Crimean crisis in 2014 put on the table a real concern for some Europeans countries, they are energy dependents and their self-capacity to produce energy has decreased. The EU needs for energy stability, defined as guaranteed supply and stable prices, is clearly of utmost importance for the EU and for a stable relationship between economic growth and political independence. This energy dependency should not curtail diplomatic relationships with nations, but oftentimes it does. **Eurostat (2019)** explains:

> The energy dependency rate shows the proportion of energy that an economy must import. It is defined as net energy imports (imports minus exports) divided by gross inland energy consumption plus fuel supplied to international maritime bunkers, expressed as a percentage.

**Figure 2** plots the change of the energy dependency rate for three EU groups. The graph shows a worrisome increase in the dependency rate of almost 12 points between 1990 and 2018.

The EU is energy dependent for two reasons: Energy consumption has been relatively stable for the past 20 years while energy production has been declining owing to several...
Moreover, the EU’s refining sector has been losing its competitive edge since 2008, with an 8% reduction of processing capacity as a number of refineries closed and others reduced their processing capacity (IEA, 2014).

Energy consumption within the EU-28 has not changed much over the past 20 years. In 1990, the EU-28 consumption was 1,668 million toe, in 2003, it was 1,803.5 million toe and in 2013, it was 1,666.6 million tons of oil equivalent (Eurostat, 2016). Additionally, energy production within the EU-28 has been decreasing with a fall in production from 937.1 million toe in 2003, to 790 million toe in 2013, and 771 million toe in 2014 (Eurostat, 2015). Consequently, the EU-28 has increased its imports of crude oil from less than 40% of gross energy consumption in the 1980s to 53.5% by 2014.

The significant point here is that since 1990, the EU-28 has significantly increased its imports of crude oil from Russia while decreasing its import from Norway and other traditional energy suppliers (Figure 3). Using the data from Eurostat on imports of oil and petroleum products by partner country, we estimated that from 1990 to 2018 total imports exhibit an average growth rate around 0.12% annual, whereas total imports from Russia show an average growth rate around 5.5% annual, imports from Norway just grew at around 0.41% annual. The difference in those rates is the reason why imports from Russia representing around 100% of the imports from Norway at the beginning of the period, in 2018 represented 413% of the imports from that country.

For the same reason, Russia has also become the main provider of natural gas. Nevertheless, Figure 4 shows that there has been a significant decrease of the amount of natural gas imported from almost 60% in 1990 to about 33% in 2018; however, imports from Russia exhibited an average growth rate around 1.1% annual while the total imports grew at around 2.91% annual in this period. Figure 4 shows that imports from Norway increased from 13% in 1990 to 23% in 2018, or in other words exhibits an average growth rate around 5.02% annual in that period. Notwithstanding, the growth enjoyed by imports from Norway
The European Union oil dependency

![Graph of oil dependency](image)

**Source:** Federal Reserve Bank of St Louis

was not enough to exceed the imports from Russia that represented 442% in 1990 and 146% in 2018 of those from Norway.

The EU has been working to obtain stable supplies of natural gas and crude oil for two reasons. First, the EU must sever its energy dependency (crude oil and natural gas) from monopolist suppliers such as Russia to ensure supply and competitive prices. Second, the EU must reduce the number of households suffering from energy poverty.

Thus, the EU has tried to introduce necessary rules and regulations and strengthen energy governance in multilateral, regional and bilateral fora, the most significant one being the USA.

Zachmann (2015) explained that the EU has approved energy policy to open up energy supply and discontinue dependency on a sole energy supplier at the informal European Council meeting at Hampton Court on October 2005. After the approval, Durao (2006) noted that:

Europe is being exposed to increasingly intense competition for global energy resources from other countries and is becoming even more dependent on oil and gas imports from geopolitically uncertain regions (p. 2).

In February 2015, the European Commission launched the Framework Strategy for Energy Union to coordinate the transformation of European energy supplies and to provide secure, sustainable, competitive and affordable energy. The Energy Union was defined as a:

European Priority Project [...] in which five dimensions are closely interlinked: Energy Security, Solidarity and Trust; A fully integrated European energy market; Energy efficiency contributing to moderation of demand; Decarbonizing the economy, and Research, Innovation and Competitiveness (European Commission, 2017a, 2017b, p. 1).
In November 2015, the First Report on the State of the Energy Union was published to reflect “progress over the last nine months and identified key issues that require specific political attention in 2016, a key year for implementation of the Energy Union” (European Commission, 2015a, 2015b, p. 1). This first report noted:

[In 2015, geopolitical events in our immediate vicinity kept energy high on the agenda. To deal with these challenges, energy security, efficiency, infrastructure development, the completion of the internal energy market and sustainability are intrinsically linked (op.cit: p. 2).]

On 30 November 2016, EU commissioner Maros Šefčovič, responsible for the Energy Union project, proposed legislation and strategy papers in the field of energy, which he described as “the biggest transformation of Europe’s energy system since the rise of central electricity grids and heating systems in the 20th century” (op.cit: p. 2). For the Commission a successful Energy Union for energy independence relied on two pillars: a resilient infrastructure and strong bilateral relationships.

The Second Report on the State of the Energy Union relied on data describing the situation in 2014 to rule out any causal relationship between any reported progress on those indicators and the Energy Union strategy because the situation in 2014 could not be influenced by the strategy, which the commission began in 2015. The report added that for areas of energy efficiency, research, innovation and competitiveness, the most recent data available was derived from 2014 which “means that it is unknown how the EU has done in these [...] fields since the Energy Union started” (op.cit: p. 2). Only the energy security sector could be evaluated using data from 2015 and 2016.

The Second Report specifies that the EU had started work on new interconnectors such as the Trans Adriatic Pipeline, and that new liquefied natural gas (LNG) terminals began operating in Poland, France and Finland. Rogers et al. (2018) explain that in 2015 this work helped Europe regain its position as a viable and commercial market for foreign LNG after years of decline (2009–2014) in LNG imports to Europe (Zimmer and Plessis, 2015). The European Commission (2015a, 2015b) also worked on a third list of Projects of Common Interest “intended to identify those projects which were most urgently needed to contribute to market integration, sustainability, security of supply and competition” (p. 1). It also highlighted that the EU needed to spend about EUR379bn per year from 2020 until 2030 to develop the needed infrastructure. Also, the EU has been working to strengthen bilateral relations reinvigorating talks with Algeria on the Southern Gas Corridor, because many countries in Central and Southeastern Europe are dependent on single suppliers for most or all of their natural gas (European Commission, 2017a, 2017b). Energy (2016) reported that according to British Petroleum, Algeria owns the tenth largest proven natural gas reserves in the world (4.5 trillion cubic meters).

Petersen and Vahabov (2010) explain that the EU has continued to promote energy reforms in Ukraine and that a well-structured Ukrainian energy reform is in the best interests of EU energy security. The EU has engaged in meetings with Russia and Ukraine to ensure a stable domestic supply to Ukraine to avoid another gas cutoff as in 2009 and demanded gas transit guaranteed from Russia via Ukraine to the EU.

The second critical need for energy independence is the problem of “energy poverty” – people who cannot afford their energy bills. In the European Commission (2017a, 2017b), it is reported that Šefčovič argued that the EU should have a “strong focus on vulnerable consumers and on energy poverty” (p. 1) because 10% of Europeans are struggling to pay their bills. He added that the EU has:
seen the enormous high number of disconnections over the last years, even in very developed Western European countries, it is quite clear that before you are disconnected there should be certain procedures (p. 1).

Especially when “today without electricity, you cannot exist” (p. 1). Šefčovič (2016) emphasized that energy poverty is a problem not just:

[I]n our poorer Member States. Even in a country like Germany – which offers social benefits for energy – 350,000 households were temporarily disconnected from electricity in 2015 because they couldn’t pay their bill (p. 2).

Šefčovič (2016) added that the EU should put forward “some kind of plan (on) how to help those people who are facing budgetary problems and not to proceed with automatic, unannounced switching off of the electricity supplies” (p. 2). Heating and cooling represent half of the EU’s energy consumption. It relies heavily on fossil fuels, which translates into a high import dependency. He also noted that almost 10% of the expenditures of low-income households are energy-related and that only 23% of those households in 2015 had sufficient financial means to heat their homes to an adequate level. This situation led the European Commission (2016a, 2016b) to propose the Clean Energy for Europeans measure to ensure that vulnerable and energy-poor consumers were not left behind.

The European Union at a cross-roads: the USA or Russia
The EU is at cross-roads because it must guarantee the Union’s energy demand. The EU worked on the T-TIP cancelled under the US administration of President Trump. When the negotiations began in June 2013, the European Economic and Social Committee (2016) explained that Europeans placed a high priority on the inclusion of a research paper covering raw materials and energy to ensure energy independence. Following the first round of negotiations, the European Commission identified common grounds with the USA on trade in raw materials and energy. A separate research paper on energy was important to the EU, but the USA questioned the need for separating the provisions on energy from trade in other goods and services.

Livingston (2015) and Livingston and Feldman (2016) stated that the US negotiators claimed that energy was sufficiently covered in other research papers of the T-TIP and, that once ratified, US energy exports to the EU would be sufficiently easy. The USA further argued that with the signing of the EU-US Energy Council in 2009 both nations had been working to enhance energy cooperation. The objectives of the Energy Council were stated by the European Commission (2009) “to deepen their bilateral energy cooperation and to address the growing challenges of global energy security, sustainability and climate change” (p. 1).

The last meeting of the EU-US Energy Council was on 4 May 2016 and the European Commission (2016a, 2016b) explained that this meeting:

[...] saw the reinforcement of the Energy Council between the EU and the US [...] [and] [...] recognized T-TIP’s potential to foster free trade in energy and low carbon technologies by diminishing trade and investment restrictions, promoting cooperation and regulatory coherence, and enhancing transparency (pp. 1–2).

The EU further argued that a separate research paper would help increase EU imports of US oil for energy security reasons and to reinforce shared norms and rules for global energy trading. The EU further argued that the block could become a perfect market for the excess energy supply, thereby expanding EU-US cooperation in transatlantic energy trade, foreign and security policies.
As Natali et al. (2015) explained, the debate over whether a research paper on energy should be included in the T-TIP negotiations continued because neither the GATT/WTO nor the Energy Charter Treaty establish an effective agreement on cross-border energy trade. Selivanova (2010) noted that “the WTO agreements do not provide for specific rules on trade in energy” (p. 1). The Energy Charter Treaty (ECT) provides a multilateral framework for energy cooperation that is just emerging as a significant international legal instrument. Konoplyanik and Thomas (2006), among others, state that the ECT also provides protection for investment and facilitates trade and transit between energy producing and consuming countries. But the treaty did not finalize its Energy Charter Transit Protocol, that was intended to mitigate some specific operational risks that continue to affect energy transit flows. It also meant to call for the need for a legally binding framework for oil, gas and electricity transportation and transit which was still not addressed as of the meeting in Brussels in November 2015. Countries are therefore forced to frame energy trade as part of bilateral relations, which is not adequate for economic and political stability as explained by Natali et al. (2015): “Energy is considered an area of high strategic relevance, having a strong impact on national security and sovereignty, which can also open door to protectionism” (p. 5).

The EU therefore has found itself depending on Russia’s abundant fossil-fuel resources for economic and geopolitical stability and Russia depends on the European energy buyers for much of its revenue, that is often then used to support the Eurasian Economic Union. Movchan (2015) stated that the EU’s dependence on Russian fossil-fuel resources is at the heart of a complicated geopolitical and economic scenario, with Russia working on a grand strategy to build a Russian Union and an area of influence to become a powerful leader in the 21st century. Russia has strengthened its presence in the Arctic Sea requesting the United Nations an extension of its geographical boundaries on the Arctic Sea’s continental shelf and, in the Mediterranean region, expanding its naval base on the Syrian port city of Tartus (Russian News Agency, 2017).

Roderick (2015) explains that the Ukraine conflict has become a destabilizing element for the EU, in terms of its deep economic and political impact. Russia’s annexation of Crimea from Ukraine in 2014 prompted a number of international governments to apply sanctions that contributed to the collapse of the Russian ruble and the start of the Russian financial crisis. In retaliation, the Russian president signed on August 2014 an edict limiting and, or, prohibiting, for one year, the importation of agricultural products, raw materials and food originating in countries imposing sanctions against Russian entities or individuals.

Baczynska (2016) reports that EU leaders agreed on 15 December 2016 to extend economic sanctions against Russia until mid-2017 because of the turmoil in Ukraine. The EU imposed sanctions on Russia and extended them:

[...] by six months each time ever since Moscow claimed it would never give back Crimea. The conflict in east Ukraine – which has killed 10,000 people to date – is not resolved despite peace mediation by Germany and France (p. 1).

The Crimea crisis and European sanctions on Russia for non-compliance with the Third Energy Package, [2] led to the cancellation of the South Stream Project on 1 December 2014 expected to transport natural gas across the Black Sea into Bulgaria.

Boersman (2014) explains that the Project had a maximum capacity of 63 billion cubic meters (bcm) of natural gas and would have two branches: one supplying the Balkans and Austria, and another supplying northern Italy. The project was replaced by the proposal for the so-called Turkish Stream which was temporarily halted due to Turkey’s incident with a Russian fighter jet (BBC, 2015). However, a final agreement was reached, and the Turkish
Stream was officially approved when the Grand National Assembly of Turkey voted in favor of the agreement (Mazneva et al., 2016). This project envisioned the construction of two legs of a gas pipeline beneath the Black Sea, with a maximum capacity estimated at 15.75 bcm of natural gas annually per leg. Construction was to begin in 2017 and be completed by late 2019, with an estimated total cost of €11.4bn (US$12.7bn).

A dispute arose around the construction of another pipeline, Nord Stream 2, running under the Baltic Sea from Russia to the German Coast near Greifswald, making Germany the main EU point of entry for Russian gas but granting a voice to Finland, Sweden, Denmark to express concerns. However, Russia and Germany could alter the route to avoid objections to the construction of the pipeline. The Visegrad Countries have also joined the Nordic states in asking the EU to take a united stand on the impact of Nord Stream 2, directives related to energy union, the Third Energy Package, energy independence and the Ukraine situation. Russia is interested in the construction of the Nord Stream 2, which goes against the energy diversification objective and Article 9(1) of the Gas Directive because Gazprom is both the owner of the pipeline, and producer and supplier of the natural gas flowing through it.

Some authors such as Pirani et al. (2009), among others, argue that this project also would concentrate more than 80% of Russian gas imports into a single supply route jeopardizing the diversification purpose of the Energy Union project. Some experts claim that the idea of the Energy Union is just not compatible with the spirit of the Nord Stream 2 pipeline given that Gazprom is the largest gas supplier in Europe and the pipeline is essentially the antithesis of diversification.

Others, such as the World Energy Council (2016), contend that Nord Stream 2 is needed for a number of reasons. First, Western European gas production is in rapid decline and will require more gas imports from Russia via Nord Stream 2. Second, the recent increase in demand for gas has led to a high utilization rate of the existing Nord Stream pipeline. In 2016, on average 80% of the capacity was in use and in 2017 the average of utilization so far has been 97% (p. 1).

The USA has also joined the discussion and has proposed the Counteracting Russian Hostilities Act which bans all investments worth more than US$20m in the Russian oil and gas sectors, including those investments made in pipelines such as North Stream 2.

The European Commission and ministers from Cyprus, Greece and Italy backed a plan to build a new gas pipeline from Israel to Europe called the East Med Pipeline that was to be in operation by 2015 with a capacity of up to 16 bcm of gas per year (Rettman, 2017). This idea was promoted by Israel and Cyprus, which were offering their offshore gas reserves as an alternative to the EU’s two main gas suppliers: Russia and the North Sea depleted reserves. However, this new proposal sparked some skepticism, mainly due to the projected completion date and the cost of the pipeline of around US$5.7bn according to S&P Global Platts (2016). Another source of skepticism came out of the US fracking breakthroughs, which were driving gas prices downward and making energy infrastructure less profitable.

**Importance of energy independence: the US experience**

The USA has learned the importance of gaining energy independence from producer countries which would jeopardize its economic security and curtail its diplomatic power. Many scholars such as Baumeister and Kilian (2016), among others, explain that it is estimated that for every US$10 increase in the price of crude oil in the USA, there is a 0.25% drop in gross domestic product (GDP). Figure 2 shows that when the price of WTI was fluctuating in a range between US$20 and US$60 per barrel (from 1990 to 2007), the real
GDP recorded a significant swing. When the price of oil surpassed the threshold of US$60 per barrel, the country’s GDP suffered a significant drop and recovered only as the price of oil dropped in mid-2008 (Hamilton, 2009). Indeed, soon after the world started feeling the so-called Great Recession in December of 2007, the price of WTI crude oil hit historic high of US $154 per barrel in June 2008, hindering any possibility of a quick economic recovery (Figure 5).

Eurostat (2016) reported that the USA increased its primary production of energy from 1,655.8 million toe in 2003 to 1,881 million toe in 2013. The EIA (2017) reported that in 2015, domestic energy production was equal to about 91% of US energy consumption meaning that the USA is still importing a percentage of its energy requirements. Rascouet and Smith (2017) explained that in 2016 Saudi Arabia exported an average of 1.08 million barrels a day, Venezuela shipped about 733,000 barrels a day and Iraq some 400,000 barrels a day of crude oil to the USA.

With the shale revolution, the USA had almost become energy independent and emerged as a new energy superpower, breaking free from any forced tradeoff between energy economic security and energy diplomatic freedom. The US economic and diplomatic policies could no longer be held hostage by any energy supplier. The EIA (2015) explains that the US energy revolution changed market dynamics that shaped the transatlantic energy agenda and relations particularly when the USA faces a surplus of light sweet crude oil and US refineries become more suitable for processing heavy oil.

After the 1973 Arab oil embargo, the USA began working toward energy independence. First, the US Congress passed the Energy Policy and Energy Conservation Act on December in 1975 to ban most of US oil exports [4]. The act empowered the US president:

[T]o restrict exports of coal, petroleum products, natural gas, or petrochemical feedstocks, and supplies of materials or equipment for exploration, production, refining, or transportation of

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**Figure 5.**

GDP and WTI

**Source:** Federal Reserve Bank of St. Louis
energy supplies. The act also authorized the President to exempt crude oil and natural gas exports from such restriction where he deems such exemption to be in the national interest, such as in recognition of the historic trading relations with Mexico and Canada. The act required quarterly reports to the Congress on any such restrictions made (94th US Congress).

The use of hydraulic fracturing to produce shale gas has increased US natural gas export capacity and sparked an ongoing debate on the economy, energy independence, climate change and energy security. Natural gas exports from the USA require federal approval pursuant to Section 3 of the Natural Gas Act (NGA, 15 U.S.C. §717 b) (Ratner et al., 2015). The Department of Energy’s Office of Fossil Energy and the Federal Energy Regulatory Commission must authorize the export of the commodity and related facilities, respectively. This overarching federal role in the expansion of US natural gas exports has been the subject of ongoing review and debate in Congress. The prospect of growing natural gas exports, particularly LNG, continues to be a factor of Congressional debate, with several bills to expand LNG exports submitted to the 114th Congress: the LNG Permitting Certainty and Transparency Act (H.R. 351 and S. 33), the American Job Creation and Strategic Alliances LNG Act (H.R. 287), the Crude Oil Export Act (H.R. 156), the Domestic Prosperity and Global Freedom Act (H.R. 89) and the Export American Natural Gas Act of 2015 (H.R. 428).

In the case of Mexico and Canada, the North America Free Trade Agreement has a separate energy research paper – Research paper 6: Energy and Basic Petrochemicals – which establishes the energy relationship between the USA, Canada and Mexico (Foreign Trade Information System, 2020). Article 605:

[...] restricts the US ability to limit its crude oil and petrochemical exports to Canada and vice versa. While Mexico is not part of Article 605, there are also exceptions for re-exporting foreign oil and for small swaps with Mexico.

Squeglia and Matarazzo (2015) argue that the USA worked for decades to achieve a technological breakthrough in the production of different sources of energy. These efforts paid off by 2013 when the USA became the largest oil and natural gas producer with a double impact. On one hand, for the past ten years, US net imports of crude oil and natural gas have declined, a trend that is likely to continue in the future. On the other hand, the sudden abundance of natural gas is forcing the USA to find new export markets to reduce the problems associated with oversupply. For this reason, the long-standing crude oil export ban adopted in December 1975 was lifted by the US Congress on 18 December 2015. The US shale revolution had undermined the energy security rationale for the ban. The Economist (2016) explains that this move:

[... ] has three potentially positive outcomes. It will increase the market for the light, sweet crude pumped out of America's shale deposits, which may eventually give the fracking industry a fillip. It will give refineries outside America access to a greater variety of oil, enabling them to operate more efficiently. And it will make West Texas Intermediate (WTI), the reference price in the United States, a global benchmark for light, high-grade crudes to rival Brent, an international benchmark that is based on a mix of heavier crudes. That would make oil trading more efficient (p. 1).

The energy revolution and independency of the USA promoted an excess of supply of gas and crude oil, being the most important reason reducing the gap between prices of Brent and WTI (Figure 3). Between 2011 when the USA became energy independent and 2015 when US regulation was amended for the new reality, the price of WTI was about US$2 below the Brent Spot price (Figure 6).
Contribution and conclusion

The theoretical corpus and data reviewed along this research allowed to analyze the current oil dependency of the EU to determine if it represents a real threat for its economic growth and diplomatic freedom. The main contribution of this research is that it provides a systematic review analysis describing the data and policies related with the energy market that help identify the link between the oil dependency, economic freedom and diplomatic freedom. Further, this paper develops a conceptual framework to construct a holistic and descriptive approach of the phenomenon of study. It finally concludes over the findings and provides a recommendation for policymakers.

The recent history of Ukraine in 2006 and 2009 that suffered in first-hand the consequences of being an energy-dependent country of Russia should be an example to European policymakers. This country had to decrease its imports from Russia from 74% to 37% between 2014 and 2015 for political tensions. Nevertheless, the Ukraine crisis went beyond the political arena to become an economic crisis with a contraction of around 15% of the GDP per capita in 2009. Per Eurostat, the EU aggregated GDP per capita shows an average growth rate of around 1.21% annually from 2000 to 2018, which means that a shock such as the suffered by Ukraine would have a great impact and require many years to recover.

The main conclusion of this study is straightforward. The EU depends heavily on fossil fuels despite reducing energy consumption and adopting alternative forms of energy. More specifically, the EU today depends largely on Russian supplies, generating a very complicated geopolitical and economic scenario that includes Putin’s grand strategy to build the “Russia Union” and boost his position as a leader in the 21st century. Russian efforts to strengthen its presence from the Arctic sea to the Mediterranean, its monopoly as a fossil fuel supplier and its willingness to use its energy power are posing diplomatic problems with possible economic impacts.
Our findings revealed the EU’s need for energy supplies clashes with its need for energy independence, as reflected in the debate over the construction of the Nord Stream 2. The EU did not receive the necessary support from the USA (during the Trump’s administration), which was reluctant to make any statement or to take any position with respect to energy-related issues, claiming it was reviewing all climate and energy policies inherited from the previous administration (the Obama’s administration). The USA has declared that the EU-US energy summits will continue in the near future. However, at the meeting of energy ministers from the Group of Seven and the EU on 10 April 2017, the USA did not endorse any text that referred to any energy-related agreement. The Biden’s administration seems willing to reverse this trend; however, the impact of the new administration is yet to be seen.

The main implication of this research reveals that EU’s policymakers must work diligently to make the best out of EU energy dependency, regardless of the tensions between the need for energy security. The World Economic Forum (2017) in its Global Energy Architecture Performance Index Report 2017 concludes that 14 of the 20 best-scoring countries are members of the EU adding, however, that:

[...] the EU28 is challenged by a lack of natural resources, resulting in a high dependence on imports (scoring 0.23 for energy imports as a percentage of GDP) and limited contribution of fuel exports to its economies (0.06) (p. 11).

It also noted that the Energy Union must strengthen its internal energy market, the security of market supplies and the sustainability of the regional energy system as a whole. The most significant recommendations drawn from this research conclude that the EU needs a change of energy priorities with better incentives for alternative energy project led by innovative entrepreneurs, less bureaucracy and regulations for energy businesses, and a broader diplomatic job to find alternative energy suppliers.

Notes
1. Per the US Energy Information Administration (EIA), petroleum is a broad category that includes both crude oil and petroleum products (EIA, 2019).
2. A European Union competition and energy legislation, which stipulates the separation of companies’ generation and sale operations from their transmission network
3. The Czech Republic, Hungary, Poland and Slovakia
4. Exceptions are: crude from Alaska’s Cooks Inlet and North Slop and heavy oil from certain California fields.

References


Further reading


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