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TRANSMISSION OF COVID-19 ECONOMIC SHOCKTO THE ALGERIAN ECONOMY: evidence and impacts.

انتقال الصدمة الاقتصادية لـجائحة COVID19إلى الاقتصاد الجزائري

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Abstract

The global economy is living a state of economic recession triggered by the outbreak and spread of Covid-19 virus also known as 'Coronavirus'. Similar to other countries, Algeria is struggling to face the economic impacts of Covid-19 pandemic spread, in addition to oil falling prices impacts. Using an analytical approach and based on available reports and data, we try to contribute and give a thorough explanation of international propagation of the Covid-19 economic shock constructed on the existing literature on crises contagion. Then, we explore possible implications of this global crisis on the Algerian economy. The main finding of this paper is that Covid-19 shock can be considered so far as a common shock originated from China and transmitted to other countries, combined with independent shocks resulting from confinement measures put in place in all affected countries. Being as an unprecedented crisis, full collaboration and support of all parties are required more than ever.

Keywords: Covid-19, Economic shock, Contagion, Pandemic impacts, Algerian economy

ملخص

نهدف من خلال هذه الورقة الى دراسة الانتشار الدولي للازمة الاقتصادية التي يشهدها العالم بسبب جائحة كوفيد 19، وتوضيح انعكاساتها على الاقتصاد الجزائري، باعتبار الجزائر تعاني على غرار دول العالم من اثار الجائحة من جهة، وانخفاض أسعار النفط من جهة اخرى، وقد استخدمنا في هذه الدراسة مقاربة تحليلية بالاعتماد على البيانات المتاحة واستنادا الى الادبيات السابقة حول عدوى الازمات.

تمثلت أهم نتائج البحث في أنه يمكن اعتبار الأزمة التي خلفتها جائحة كوفيد 19 بمثابة صدمة اقتصادية مشتركة بين الدول، كونها أزمة غير مسبوقة، حيث نشأت في الصين وانتقلت بفعل العدوى الى بقية الدول، الى جانب الصدمات المتعلقة بكل دولة على حدى نتيجة لإجراءات الحجر المطبقة في مختلف الدول، وعليه يتطلب الامر تعاون كبير و تكثيف الجهود بين جميع الاطراف المتضررة.

الكلمات المفتاحية: كوفيد −19 ، صدمة اقتصادية ، عدوى ، آثار وبائية ، الاقتصاد الجزائري.

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1. INTRODUCTION

The world is facing a multidimensional crisis triggered by the outbreak and spread of Covid-19 virus, also known as 'Coronavirus'. Preventive measures put in place to face this health threat, like confinement, curfew, international travel restriction and suspension, gathering limitations …etc., led to a global recession that can be detrimental not only to the public health systems but to various industries and markets, especially if lasting too long.

Algeria, like other countries, has underestimated the gravity of this pandemic at the beginning and was until the first case was reported on February 25, 2020, and then 20 cases reported on March 9, 2020, that Algerian authorities have started to adopt progressively preventive measures (Lounis, 2020). These measures include confinement, a shutdown of transportation services, a lockdown of affected areas and a curfew in several cities including Algiers (IMF, 2021). In fact, the Algerian economy was hit by two shocks: the spread of Covid-19 combined with a sharp decline in oil prices that have aggravated the situation of an already fragile economic system. The new government has to face and respond, in a short term, to both shocks, which is not a very easy task because unlike the Covid-19 shock, the heavy reliance on hydrocarbons revenues has always been a big source of problems for this economy.

The economic shock of Covid-19 brings about again the discussion on how economic crises emerge and spread. Thus, it is important to analyse the transmission mechanisms of this shock based on the existing literature on crises contagion. Hence, the main focus of this article is analysing the transmission and impact of this economic shock. To which extent contagion (as one of the transmission mechanisms) can be blamed? And how understanding the literature on contagion can help researchers to better understand the spread of this shock?

The remainder of this paper is organized as follows: section 1 starts to discuss the common features of medical (biological) contagion and economic or financial contagion, and why those two distinct domains are constantly linked in economic literature? Section 2, presents the different mechanisms responsible for crises transmission. Section 3, discusses the main features and vulnerabilities of the Algerian economy, and finally, section 4, presents different possible strategies to mitigate the impact of this shock.

2. Transmission mechanisms 'from biological contagion to economic contagion'

The Covid-19 global crisis is analysed mostly and obviously as a health crisis, where all professionals in this field are working to understand the origins and the spread patterns of the virus, hopefully, to come up with a more efficient vaccine in the near future. This shock can also be approached from an economic point of view, due to the inevitable economic ramifications of this crisis on countries and individuals as well. The relationship between epidemics and economic crises is explored in economic literature in another different way, that is comparing the outbreak of a specific virus and the appearance of economic shocks. Linking diseases and economic crises is not analysed in the literature as a cause-effect relationship, Although this relationship does exist since an epidemic can lead to an economic downturn, and a bad state of economic system will undoubtedly affect the prevalence of an infection (Pekham, 2013, p.228), but as an analogy that aims, through comparing the two systems (medical and economic), to understand how each phenomenon (epidemics and crises) works and which strategies to implement to face each of them.

The entanglement of both economic and biological contagion has led since the 1990s to the appearance and widespread use of the term 'contagion' in economic lexicon. The use of the term 'contagion' in its biological context, reflects in the best way what happened during economic crises. This is why it was adopted by experts, media and policymakers in their daily discourse to describe the density and severity of crises that hit emerging markets in the 1990s. Economic and financial contagion received more attention after the Asian crisis in 1997 and a large body of research has discussed the meaning and contribution of this phenomenon in the spread of crises. Another reason behind this analogy is the repetitive coincidence of different episodes of epidemic spread and economic crises transmission in the past. The simultaneous occurrence of the Asian crisis in 1997 caused by the devaluation of the Thai Baht and Avian influenza (H5N1) in Hong Kong, the coincidence of Swine-origin influenza H1N1 pandemic and the Subprime crisis in 2009. All These events introduce biological and epidemiological names to economic crises, and they helped spread those names among experts and public as well. The most famous one is referring to the 1997 crisis as the Asian flu and to the 1998 crisis as the Russian virus(Forbes, 2012; Kaminsky& Reinhart, 2000).

This term is used metaphorically in economic theory to refer generally to a state where 'a crisis in one country (or region) can affect markets of very different sizes and structures around the globe' (Forbes, 2012). This metaphor does not necessarily induce that both phenomena (economic and medical) are identical, rather than to conclude that they are in fact linked in so many ways and forms. The use of metaphor is this context –scientific discourse- has a main function according to McCloskey that says - to 'explain the unfamiliar or the unknown (new concepts and ideas), scientists inevitably resort to the familiar' (McCloskey, 1995). Haldane (2013) argues that the similarities between these two different types of crises are no coincidence, and he considers the economic system as 'a complex adaptive system…that applies some of the lessons from other network disciplines- such as ecology, epidemiology, biology and engineering- to the financial sphere'. comparing medical and economic systems may help to understand the structural vulnerabilities that built-up in the economic system over the past decade, and suggests ways of improving its robustness in the period ahead (Haldane, 2013). Peckham (2013) hopes that 'globally 'emerging and 're-emerging' infections helped to shape a theory of financial contagion. Thus, reopening this debate is important right now since the world is living, at the same time a health and economic crisis, where all lessons from past crises are needed to face this critical situation and to visualize the shape of both medical and economic system in the post- Covid-19 world.

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3. Transmission of Covid-19 economic shock: is contagion responsible?

The similarities shown above can help to understand biological and economic contagion, but it can also generate mistakes. Economic contagion cannot be perceived as a biological contagion in all its details. This mistake resulted from using this term by the media and non-specialists. If you ask anyone about what economic contagion does and does not mean, the answer will be put simply as 'contagion is the transmission of a crisis from one country into another'. So why researchers have dedicated all this research on an already known phenomenon.

3.1. Definition of economic contagion

After two decades of extensive work on crises transmission, researchers still do not agree on one definition of contagion, and hence their analysis of crises spread, vary both theoretically and empirically. A survey of related literature (Dornbusch et al., (2000), Claessens& Forbes, (2004)) reveals that it is more correct to talk about simultaneous occurrence of crises rather than crises transmission. Although everyone can notice the presence of contagion through its related negative features, such as high market volatility and movement, general economic turbulence associated with a fall in economic indicators, economists refuse to blame only contagion (Seddiki, 2019). Thus, crises propagation is actually a complex process and cannot be simply explained by contagion like claimed by non-specialists. Masson (1998) gives a clear classification (compared to existing studies at that time) of potential factors responsible for crises simultaneous occurrence. These factors include: common cause also called 'Monsoonal effect' (Masson &Mussa, 1995) that is '*major economic shifts in industrial countries that trigger crises in emerging markets* (Masson, 1998). The second factor is normal transmission also referred to as 'spillover' that is '*transmission resulting from the interdependence among developing countries themselves'* (Masson, 1998). The last factor is 'pure contagion' also called 'shift contagion' (Forbes &Rigobon, 2001) and 'true contagion' (Kamisky& Reinhart, 2000) that '*involves changes in expectations that are not related to changes in country's macroeconomic fundamentals*'. Masson (1998) describes contagion as a jump between multiple equilibria resulted from a change in investors' expectation. Goldstein (1998) explains this change by considering that investors perceive crisis elsewhere as a 'wakeup call' that makes them change their portfolio strategies abruptly. The most accepted definition of contagion is provided by Forbes &Rigobon (2002). They define it as '*significant increase in cross-market linkages after a shock to one country (or a group of countries)'*. Although this definition is restrictive and not universally accepted (as mentioned by Forbes &Rigobon (2002) themselves), it represents two main advantages: it provides a straightforward framework for testing if contagion occurs, and a straightforward method of distinguishing between alternative explanations of how crises are transmitted across markets. (Forbes &Rigobon, 2002).

Masson's monsoonal effect is referred to in other studies as 'global shock', and although researchers do not agree upon one definition of contagion, they all agree on considering crises propagation resulting from global shocks as a normal transmission, thus not contagion. Another explaining factor (not mentioned by masson) of why crises appear everywhere at the same moment, is simply independent shocks. This phenomenon simply describes the scenario where multiple shocks coincidently hit different countries at the same time, with no cause-effect relationship and without any transmission from one country to other countries.

To sum up, whenever a crisis hits more than one country at the same time, the contagion may be (and will be blamed in public sphere) responsible for spreading economic turmoil from where it has originated (ground-zero country) into target countries. however, it is more accurate to say that crises may happen simultaneously in more than one country even in the absence of any kind of transmission. This is why it is more convenient to use the expression 'simultaneous occurrence' of crises instead of 'crises transmission'. The following figure illustrates the main mechanisms responsible for the simultaneous occurrence of crises:

Fig. 1 Mechanisms behind the simultaneous occurrence of crises

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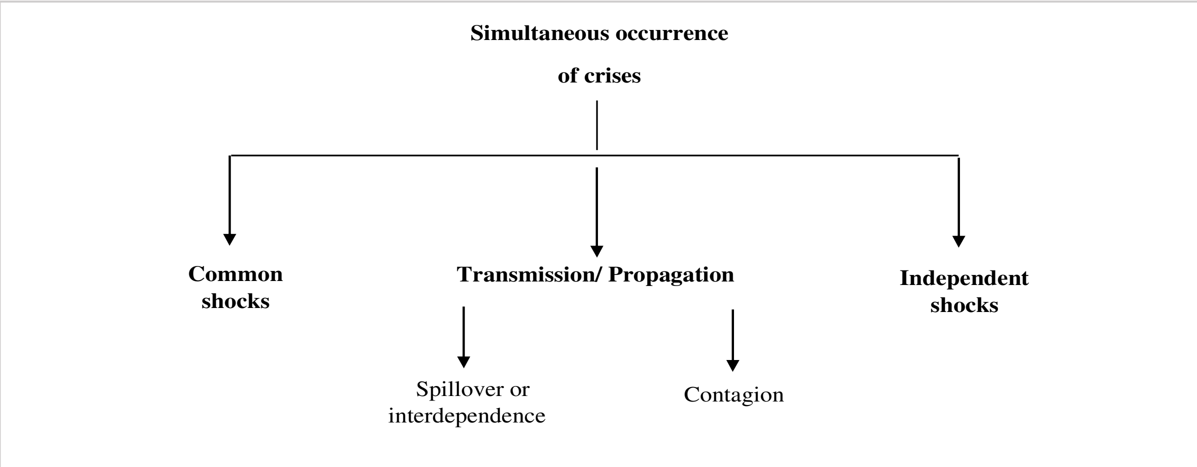
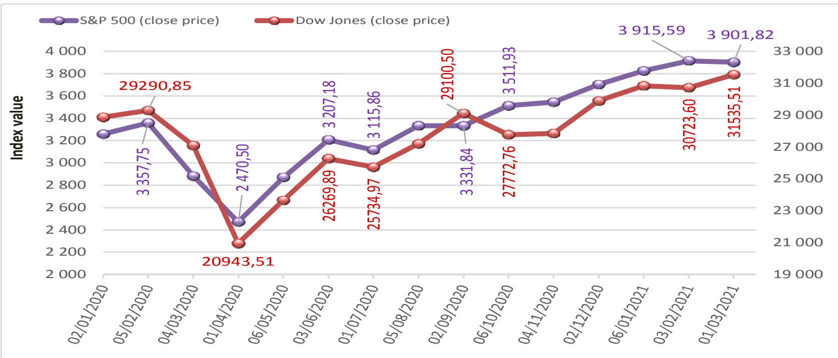


Source: by authors, based on literature review.

3.2. Covid-19 economic shock transmission

The world economy is hit by a sharp negative shock after the widespread of Covid-19 virus also called 'Coronavirus'. After being declared as a global pandemic on March 11, 2020, by the World Health Organization, the outbreak of Covid-19 is becoming a global economic threat instead of being a public health issue only. Fears of global economic recession are increasing especially after several reports and statements of international organizations, such as the declaration of the head of International Monetary Fund in April 2020 stating that '*the world faced the worst economic crisis since the great depression of the 1930's*' (BBC News, 9 April 2020). According to UNCTAD (2020) report, the Covid-19 shock will trigger a deceleration of global annual growth to below 25 per cent, often taken as the recessionary threshold for the world economy, and this can cause a loss of around Trillion-Dollar of global income. The global economy that started to show slow recovery after the 2008 Subprime crisis, is now facing another shock that changed international forecasts about global annual growth in the upcoming years. The Covid-19 crisis will probably trigger a recession in some countries, and as expected, emerging markets and developing countries would be the hardest hit. IMF world economic outlook reflects the intensity of this crisis; after expecting positive per capita income growth -Four months ago- in over 160 member countries in 2020, the number has turned down, and over 170 member countries will experience negative per capita income growth this year (Georgieva, 2020).

Since its first detection in December 2019 in the city of Wuhan in Hubei province, China, large losses and drops were recorded in almost all global economic indicators, especially financial markets indicators that reacted first to this shock due to negative market sentiment. The Dow Jones Industrial Average (DJIA) and S&P (500) indices dropped by 33% and 29% respectively on March 20, 2020. FTSE 100 and the UK main index recorded the worst quarter since 1987, with a drop of 24.80%, and Japan experienced more than 20% drop from December 2019 (Bloomberg, 2020). Investors' anxiety and market uncertainty led to sudden money shifts and capital outflows, which can cause substantial risks and losses for emerging markets who rely, in large part on foreign investment and capital inflows. The figure.2 shows losses of the leading stock exchanges:



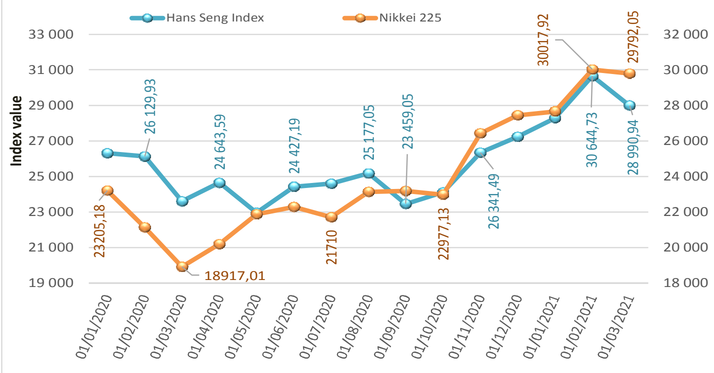


Fig. 2 Dow Jones, S&P500, Nikkei225, and Hans Seng monthly development index (Jan.2020-Mar.2021)
Source: Established by authors based on data retrieved from Yahoo finance (2021); Statista (2021); Nasdaq (2021).

The rapid spread of this pandemic in all over the world has caused, as shown above, global economic fallout. The economic shock spilled over along with the increasing number of reported cases. Since it is a multidimensional crisis, explaining factors and economic analyses have changed along with the development of this pandemic. At the beginning, China was the most affected country; hence the economic impacts of such a severe crisis on China led to a negative shock that hit other countries. In this case, what happened first was a global shock transmission that spread abroad causing external negative shocks to other countries. Considering the first stage transmission of this crisis as a common shock and not contagion is stemming from China's leading position in the global economy. Thus, what happened in China will inevitably affect the rest of the world due to different reasons such as, China being the world's biggest producer of manufactured components, thus, when Chinese factories shut down, the widgets that go into everything become harder to find. China's imports came in at US 2.1 trillion dollars in 2019, so sales in China are a major earner for multinationals, in addition to Chinese tourists staying home hits everyone. The spread of China past shocks across global financial markets tells us that the Coronavirus will repeat the same pattern but on a larger scale (Olick et al, 2020).

With the increasing number of recorded cases and confirmed deaths, other countries were forced to apply a total or partial economic lockdown. Thus, all affected countries start to experience an economic recession that was aggravated in some of them by the continuous drop of oil prices. Simultaneous internal shocks were seen in all these countries, and these shocks can be qualified as independent shocks, which according to previous definitionare internal shocks that affect different countries at the same time. Another potential contributing factor that needs more exploration (further empirical studies for months to come) is economic contagion. The outbreak of the virus led investors and financial institutions to withdraw their money invested mainly in emerging markets due to fear of future losses. A global crisis usually leads to an abrupt change in investor's expectations and portfolio strategies that may be the source of contagion. However, further empirical studies are needed to test for the existence of contagion using more data about the whole crisis period.

4. Algerian economy weaknesses and vulnerabilities

The Algerian economic system is facing the severe impacts of the global recession caused by the spread of Covid-19 pandemic: drop of oil price and oil production, business activity suspended, increase of unemployment-particularly in the informal sector-, business companies threatened to go bankrupt. As discussed earlier; it is commonly agreed upon in the literature on economic contagion that countries with fragile and weak economic systems are more prone to be affected by external shocks and crises elsewhere compared with developed countries with sound and solid economic fundamentals.

Whilst, the Algerian economic system is characterized by sensitivity and several weaknesses. Since 2014, it has recorded negative impacts of oil prices drop and political instability. Further to the Covid-19 impacts, the crisis would engender such cumulative socio-economic impacts on the economy. Besides all of these vulnerabilities, since February 2019, Algeria witnessed a political transition triggered by *Hirak* — a prominent pacific revolution toward the political system change. Therefore, disassembling of the regime and the endowment of an authentic civilian democratic system was being the core reason for millions of Algerians who were, every Friday, in a march protesting far and wide in the country.

4.1. Political regime: from instability to a new government transition

As evoked previously, since 2014, the country has known a political instability due to the critical health situation of ex-president Bouteflika's. Thus, during the five years later, the situation of the country started to be much more critical under the people's rejection, particularly, when politicians and responsible for the government have supported the fifth term of the abandoned ousted Bouteflika President.

Starting in February 2019, the Hirak crowd millions of Algerian people to the streets every week for over a year. The protestors requested a new democratic structure and an end to the era to that of President Bouteflika. Subsequently, the military pressured Bouteflika to resign on April 2, 2019, under overwhelming pressure from mass protestors throughout the country, thereby beginning a cautious transition era. However, the protests did not stop, because the fight for democratic rule had only just started (Zoubir, 2020; Zoubir& Jacobs, 2020). Since December 2019, afterwards, two disregarded elections (April and July 2019); a new president elected and considered as a “smoothly” political transition to establish a part of political stability. Whereas, the new government board might don’t have the time yet to launch its new economic plan and radical reform policies.

4.2. A rentier economy based on hydrocarbons

According to the Ministère des Finances(2016) report, the sharp drop in the price of hydrocarbons has revealed the great vulnerability of public finances in Algeria. Besides, ensuing the diminishing of the Algerian Dinar, oil taxes decreased by (-7,9%) in 2014 and (-32,9%) in 2015. The decline in budget collections has underwritten to one of the highest budget deficits in the country for at least 15 years (until 2016). It has recognised a substantial reduction in the remaining balance of the Revenue Regulation Fund (RRF). The figure. 3 below shows the oil prices based on OPEC database from 2007 to 2021.

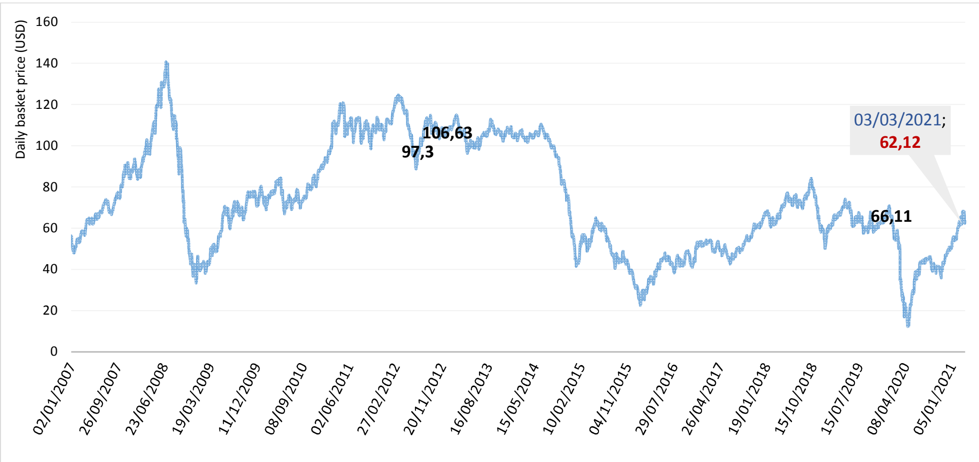


Fig. 3 Oil price evolution (2007 - 2021)
Source: Establishedby authors, based on OPEC basket price (2021).

According to the last published annual report of Bank of Algeria (2017), the budget revenue amounted to 5.042,20 billion dinars compared to 5.103,10 billion dinars in 2015, a decrease of 60,9 billion dinars (-1,2%). This simulated slowdown in total budgetary revenue materialized following a decrease in hydrocarbons revenues (-592,40 billion dinars; means - 25,0 %). The same report also showed that hydrocarbon revenues (petroleum tax + dividends paid by the national company) dropped by 25 % in 2016 (compared to 30 % in 2015), from 2.373,50 billion dinars in 2015 to 1.781,60 billion dinars in 2016 due to a 15,20 % reduction in oil prices and a 7,70 % rise in hydrocarbon value added in 2016.

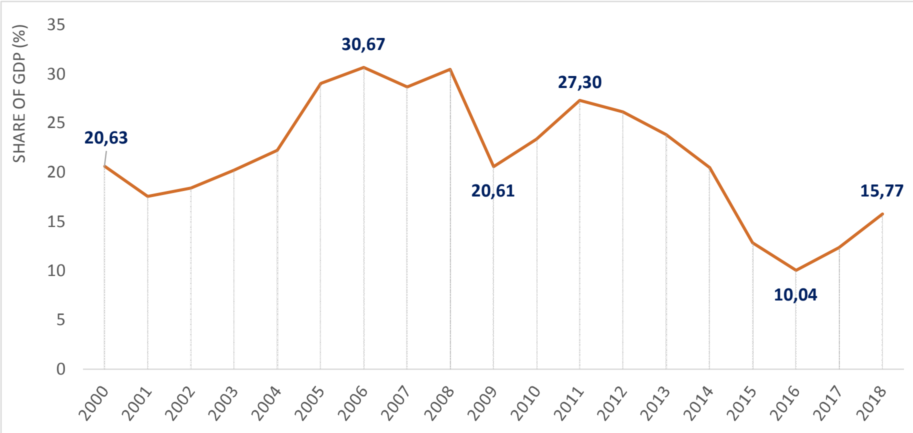


Fig. 4 Oil rents share of GDP (%) from 2000 to 2018.
Source: Establishedby authors, based on World Bank Data (2021).

Following the crash of oil prices in 2014, the Algerian economy is facing a long-lived shock that plunges the country into a deep economic crisis. However, this later may escalate if the oil shock continues and the government does not react adequately to that situation in the short term, in addition, to fixing effectively concealed economic vulnerabilities (unlink to the volatile oil prices) in the long term (Seddiki&Kiheli, 2019).

4.3. A poorly diversified economic system vs high potential of non-hydrocarbonssectors

Algerian economy is greatly dependent on oil revenues. Around 97% of overall export incomes producing by hydrocarbons industry, 70% of budget receipts and on average 37% of GDP (Allaoui, Tidjani, &Lacheheb, 2015). According to Seddiki&Kiheli (2019), after the oil crisis of 2014, the Algerian government responded by introducing progressive austerity steps, such as budget cuts, imports restrictions, with considerable effort to preserve a stable social environment. Nevertheless, Algeria's market environment also faces a range of restrictions, including regulatory sluggishness in different fields such as launching a business, customs clearance and identifying commercial businesses, delays in operations and high transaction costs (Allaoui et al., 2015).

To resolve this situation, Algeria has introduced a new strategy to remedy its economic shortcomings and to sever its economic reliance on oil revenues instead of taking immediate steps (shock therapy). The plan for diversification of income sources in Algeria requires a significant component of value generation in the hydrocarbon supply chain. A major investment program has been taken to improve national refining capacities and to grow the subcontracting industry, especially in the field of petrochemicals (Allaoui et al., 2015; Seddiki&Kiheli, 2019). Moreover, decision-makers have commenced arguing for the diversification of the economy away from energy production rather into industry and agriculture. They are trying to attract the Gulf and European stakeholders to invest in the country, and therefore they are exposing ways to boost exports of non-oil goods to the rest of the African continent (Lefèvre, 2017).

On the other hand, in 2016, non-hydrocarbon receipts totalled 3.261,10 billion dinars, an increase of 19,5 % compared with 16,2 % in 2015. Whose share of overall discretionary revenues increased from 53,50 % in 2015 to 64,70 % in 2016, predominantly due to the bulky rise in non-tax revenues that reversed the fall in hydrocarbon revenues. They actually fund 44,20 % of total expenditure compared to 35,70 % in 2015 and up to 71 % of current expenditure compared to 59,10 % in 2015 (Bank of Algeria, 2017). In the meantime, exports of goods and services contracted by 6,4 % in real terms in Q1-2019 and driven by a decrease in hydrocarbon exports due to rising domestic demand and stagnating production. However, commercial services, industrial, construction and public works continue to boost non-hydrocarbon growth (World Bank, 2019).

4.4. Covid-19 threats and impacts on the Algerian economy

This breakout of Covid-19 has further consequences on the economic structure for most developing countries, such as growth fund redirected to the struggle against the outbreak. Far more, to revive the fight for poverty elimination as a result of the economic downturn. Much of this effect can be temporal, but the Covid-19 crisis is sure to leave a permanent repercussion.The global health crisis led to the worst point of the global economy as countries tried to recover from the lowest rate, for instance: the financial crisis is hitting to the end of 2009 (Nwokolo, Ogbuagu, &Iwegbu, 2020).

According to Nicholas (2020), large parts of the economy operate on a cash basis, and often people have no choice but to survive hand-to-mouth without savings or a shelter. Losing a job or selling revenue will almost immediately mean losing the right to eat.Consequently, prevention actions have a more direct and drastic personal effect than in developed countries. In the meantime, human interaction and personal travel are necessary and not optional, and import restrictions already affect urban communities.

Additionally, the already unstable economy of Algeria is being threatened by a global pandemic (Covid-19) that has already resulted in historical low oil prices. This is, still, another warning sign of Algeria's economic weakness. In this way, both Algeria's society and the economy will be assessed at several stages during this pandemic (Ghebouli, 2020). The figure 5 below shows the total confirmed cases for African countries with more than 10 thousand cases (data last updateto December 2020) where Algeria is ranked in the 6th place with a total of 92,102 cases. As a result, the Algerian economy is being one of the most vulnerable and affected among the rest of African countries.

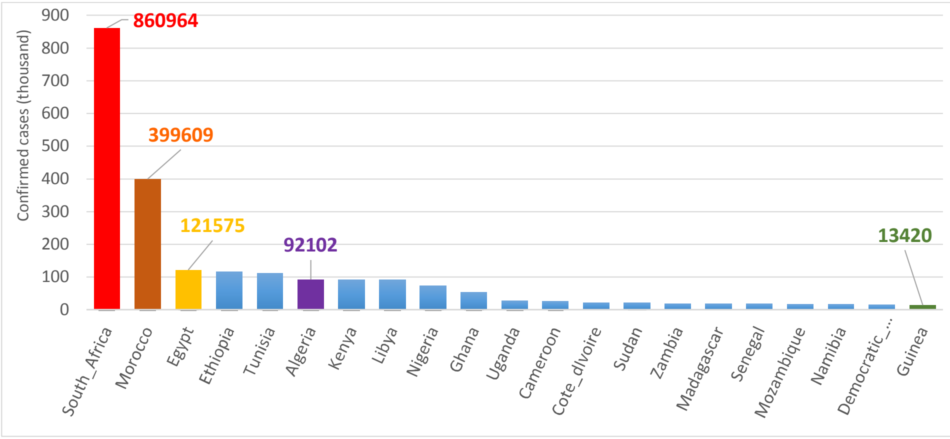


Fig. 5 Covid-19 Confirmed cases in the African continent (last update to December 2020).
Source: Established by authors based on data retrieved from African Arguments, (2020); Covid-19 Africa, (2020); ECDC (2020).

Currently, regarding the Covid-19 impacts on developing countries, Algeria's economic complications have added another dimension to the increasing difficulties facing the country. Algeria has a rentier economy, in which it's heavily dependent on hydrocarbons revenues. Thus, they initially raise incomes, as more foreign exchange flows in, therefore, theyare considered as the main fund source of the state budget, and they allow more budget expenditures (This is what it is called the '*Dutch Disease*' that is associated with two effects: *spend effect* and *resource movement effect*). Besides, the fall in oil prices (February 2020) has posed another threat to the economic system. With the government's foreign-exchange reserves dropping from US$ 193,60 billion in 2014 to US$ 46,87 million dollars in December 2020 (Knomea, 2021). The year of 2020 brought another unwelcome shock with the emergence of Covid-19 and the threats it raises as a pandemic (Ghebouli, 2020; Boubaker, 2020).

5. Conceivable policies and strategies to mitigate the impact of Covid-19 economic shock

The Covid-19 pandemic represents an 'economic shock', or an unexpected or unpredictable event that impacts the ability of markets to function normally, leading to a broader economic impact. Therefore, this shock can affect the supply, demand, or both. However, the recent Covid-19 related disruptions have happened both rapidly and globally, which has limited the ability of the overall healthcare system and economy to absorb the shocks (Miller & Radcliff, 2020).

Latest researcheshave demonstrated the impact of the pandemic on the global economy on many major platforms, including the decrease of domestic demand of disease-affected countries, the adverse effect on tourism and corporate travel, the interruption of commerce and production lines, and the health effects of illness and mortality rates. The Asian Development Bank's report predicts sales losses of US$77 billion to US$347 billion (or 0.1% to 0.4% of global GDP), where China accounts for up to two-thirds of the total, not only because the pandemic began there, but also because of its position in the global supply chain. Moreover, analysis by researchers from the Center for Economic Policy and Research (CEPR - Washington, D.C) note that Covid-19 hit the heart of 'factory Asia' including not just China, but also Japan, South Korea, and Singapore (Gopinath, 2020; Dayrit& Mendoza, 2020).

At the global level, the suggested policy initiatives include lower interest rates to stimulate innovation and growth in economic operations, 'bridge loans' that offer zero-interest loans to households and firms; improved monitoring, preparedness for emergencies, biological counter-measures such as prevention steps, comprehensive vaccination and virology (Nwokolo et al., 2020; Carlsson-Szlezak, Reeves, & Swartz, 2020). However, various countries have already engaged with incentive measures, noticeably: Australia has created a holistic crisis response package buttress the pay for apprentices and contract workers, firms expected to be most affected by the Covid-19 risk. The United States, suggested an unprecedented US$2 trillion relief package to stabilize the decreasing U.S. economy and protect workers and businesses. Many large firms in Asia are cutting senior managers' pay instead of laying off workers and by crafting relief packages for their worst-hit employees and partners (Dayrit& Mendoza, 2020).

For the Algerian case, the following part has fragmented on two sections, in which it would expose some proposed strategies and policy implications for such a compared overview amid Pre-Covid-19 and Post-Covid-19.

5.1. Pre-Covid-19 policies and strategies

5.1.1 Oil shocks preventives

Countries with over-reliance on hydrocarbons typically adopt a common menu of steps that starts with the use of sovereign funds, as the first line of defence, built up in years of rising oil prices 'Oil boom'. The following initiatives include reforms of the economy and budget systems: oil funds, budgetary oil prices, managed float exchange rate or pegs,elimination of social and energy subsidies and, ultimately, efforts to boost the private sector and diversification of exports (Lopez-calix &Touqeer, 2016, cited by Seddiki&Kiheli, 2019). In 2016, with oil prices still dropping, the authorities announced a sum of budget cuts with the method of "rationalization of expenditure". Thus, the government adopted a more restrictive budget for 2016, with public expenditure decreasing by 9% and current expenditure cutting by more than 3%, without affecting the main subsidies (food, housing and energy) (Seddiki&Kiheli, 2019).

5.1.2 Pre-measures against Covid-19 spread

Despite the fragile and soaked health system in Algeria, the government has taken exceptional measures from the beginning by providing a budget of US$100 million to stem the epidemic, in the objective to speed up the importation of all medicinal goods, safe equipment and testing in adequate quantities to cope with the outbreak of coronavirus in Algeria (Algérie Eco, 2020; Boubaker, 2020).

For the benefit of businesses, tax measures have been taken, such as deferral of tax declarations. Given the severity of the injury, these steps are helpful but inadequate. While the foreign-exchange reserves are declining; the government has already announced a 50% cut in public spending by 2020(Boubaker, 2020; Zoubir& Jacobs, 2020).

5.2. Post-Covid 19 policies and strategies

The current President of Algeria has vowed to step away from Algeria's reliance on oil to improve agriculture and to explore untapped resources such as uranium, gold, zinc, iron and phosphates. He argues that the country can meet the threat of declining oil prices and their effect without borrowing from international financial institutions, which, he said, will boost Algeria's independent foreign policy (Zoubir& Jacobs, 2020).

Nevertheless, the increasingly deteriorating financial condition and the weaknesses of the Algerian economic model have not helped to cope with the pandemic. But the outbreak also highlights a worrying reality for Algeria's economic prospects in the post-Covid-19 era: the urgent need to change the financial and macroeconomic priorities of the country with quick adaptation to the developing situation. Subsequently, the strategy for the improvement of Algeria's business environment and opening the country to foreign investors, introduced by the government under the Finance Law (FL) of the year 2020. Hence, by the end of May 2020, the Algerian government has debated and established the Complementary Financial Law (CFL) ahead to the National Popular Assembly.

Regarding the Finance Law (FL) 2020; it is continuing to provide measures that should mitigate the financial and economic impacts engendered by Covid-19 during the year of 2020. Among them: (*i*) reintroduction of the controlled declaration procedure (dedicated to persons exercising a self-employment activities), (*ii*) Expansion of electronic payment instruments (all electronic methods of payment are authorized and accepted by Algerian banks), (*iii*) start-ups are given without any time limitations a Corporate Income Tax (IBS)[1] and VAT exemption from company transactions, (*iv*) the Algerian government can initially borrow selectively from foreign and regional financial institutions for the funding of strategic structuring and targeted projects, (*v*) restriction of the area of compliance only to strategic sectors of the local partnership rule (called *rule 51/49*) (Official Gazette, 2019; Pwc, 2020).

However, the CFL2020 included several key policy responses to the Covid-19. Fiscal measures have been taken, including DZD 20 billion for allowances to the unemployed because of Covid-19, and DZD 11.5 billion for transfers to poor households. Ultimately, to adjust to the low oil price environment, the CFL planed for a reduction in current and capital spending by 5.7 % (IMF, 2021).

In the meantime, some supplementary actionsare introduced by CFL 2020, particularly: (*i*)elimination, in accordance with Law 16-09, of the State's right of pre-emption for investment promotion;(*ii*) Individuals or companies in the Southern regions of the country benefit from a 50% reduction on the paid amounts

[1] Corporate Income Tax :*Impôts sur les Bénéfices des* Sociétés (IBS).

ofPersonal Income Tax (IRG)[2] and Corporate Income Tax (IBS), for a period of five years; (*iii*) Dividends charged to corporations are eliminated by maintaining the 15 percent rate of taxes (between resident legal entities) (Official Gazette, 2020a). In another word, the government has declared that income tax refunds were delayed for people and companies, with the exception of big business. Contractual deadlines will also be shortened and penalties on firms with public procurement delays would be suspended.

Besides, monetary measures have been taken. The Bank of Algeria lowered the required reserve ratio from 3 % to 2 %from February 15, 2021. It has lowered the key rate by 25 basis points (0.25%) applicable to the main refinancing operations, to set it at 3 % instead of 3.25 % from end of April 2020. It, also, declared that it was facilitating solvency, liquidity and Non-Performing-Loan (NPLs) ratios for banks. Accordingly, Banks are also allowed to extend payments of some loans without a need to provision against them. Despite, by 6 January 2021, the Bank of Algeria has announced that it will extend the flexibility of prudential obligations on banks initially announced in April 2020 to the 31 March 2021(Bank of Algeria, 2020, 2021a, 2021b; IMF, 2021; APS, 2020).

Furthermore, macro-financial measures have been taken.According to the General Directorate of Algerian Customs (2020); it has announced exceptional measures regarding the import & export activity. These measures aimed at facilitating and accelerating the importation of goods and their removal upon arrival, subject to a commitment to finalize customs formalities subsequently. Thus, they concern: health products, medical equipment and all products directly linked to the national policy to combat the spread of the Covid-19, as well as basic food products and widely consumed, to meet the needs of households. Meanwhile, some other measures allowto receive electronically documents used to meet both customs and banking processes for import activities and transactions by swift approval from the bank sending the documents. However, authorities excluded exports of several products, including food, medical and hygiene items(KPMG, 2021; IMF, 2021).

Despite the difficulties that characterize the country's financial situation, the FL 2021 has particularly introduced several tax measures. Therefore, an exemption from Tax on Professional Activity (TAP)[3] and Corporate Income Tax (IBS) for businesses with 'start-up' label and 'incubator' label for a term of four years and

[2] Personal Income Tax :*Impôt sur le Revenue Global* (IRG).
[3] Tax on Professional Activity :*Taxe sur l'Activité Professionnelle* (TAP).

two years consecutively, from the date on which they are labelled. Furthermore, the 'start-up' firms are also exempted from VAT and subject to 5% of customs rights for the machineries that have purchased, which is directly involved in their project investments.Besides, for a period of three (3) years, beginning on 1 January 2021, corporations that common shares traded on the stock exchange market will benefit from a reduction in IBS equal to the opening rate of their stock capital (Official Gazette, 2020b).

6. Conclusion

This research paper is conducted based on various researches, reports and data. The main goal of this contribution was to present a focused overview and elements of answers, also to deliver analytics to an overall issue concerning the transmission of Covid-19 related economic shock through contagion effect, and its impacts on global economy in general and the Algerian economy in particular.

This paper analyses some essential concepts and definitions, related to shocks transmission in general, to understand the mechanisms behind the actual propagation of Covid-19 shock. Possible impacts of this pandemic on the Algerian economy are also explored. This analysis aims at building an effective strategy to face actual and future crises.

The main concluding remarks are summarized in the following points:

- The nature andstate of an economic system play an important role in determining its vulnerability to external shocks; while solid economies may survive, emerging markets and developing countries are always the hardest hit;
- Contagion effect is appearing while most or all countries are setting an emergency measures (health, social, tax, finance, and economic) against the pandemic impacts.
- The Covid-19 crisis unveil several issues and shocks that deeply affected and transmitted to the global economy, unless previous known channels(Trade and finance), byother reasons for contagion between continents and countries.
- Facing global crises requires serious reforms in developing countries; Algeria is no exception. Regarding the exceptional measures that have been taken, it seems insufficient, while the Algerian government is working under an emergency plans to mitigate the pandemic effects.

- The Covid-19 crisis, may pushes and accelerates the Algerian government to deal with the ongoing plans and current projects and, also, working on the establishment of new and actualones.

- The Algerian economic system could benefit from the diversification advantages, and promoting non-hydrocarbon sectors.

- Mitigating the effects of the global economic crisis resulted from epidemics requires more collaboration and support on the regional and international level, in addition to promoting healthcare systems and building and early-warning systems to predict future crises.

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