

Demand shocks of the COVID-19 pandemic in Algeria**Dr Saoudi Mohamed**

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Abstract:

The Covid 19 pandemic has several characteristics, the most important of which is its ability to transform from a shock external to the nature of the economy to an internal shock linked to the supply and demand sides and this is a result of the advantage of suddenness and inclusiveness as no country has escaped from it and this is why we worked in this study to determine the reflection of the Covid 19 pandemic on the demand side in Algeria Especially in terms of a negative demand shock, The study concluded that the negative demand shock is closely related to the extent of a second wave of infection.

Résumé :**Mots clés:**

Mot-clé 1: Choc

Mot-clé 2: Covid 19

Mot clé 3: Choc de demande

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Mot clé 5: demande effective

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,E39, I19

La pandémie Covid 19 présente plusieurs caractéristiques dont la plus importante est sa capacité à passer d'un choc externe à la nature de l'économie à un choc interne lié aux côtés de l'offre et de la demande et ceci est le résultat de l'avantage de la soudaineté et l'inclusivité car aucun pays n'y a échappé et c'est pourquoi nous avons travaillé dans cette étude pour déterminer le reflet de la pandémie Covid 19 du côté de la demande en Algérie Notamment en termes de choc de demande négatif. L'étude a conclu que le choc négatif de la demande est étroitement lié à l'ampleur d'une deuxième vague d'infection.

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1.Introduction:

Economic shocks constitute an important axis of economic theory, which was concerned with their effects, but it is noticed that supply shocks and external shocks The lion's share took the opposite of demand shocks, and this is due to their frequent occurrence, which made them seem more important, and the prevailing trend towards defining the nature of the economic balance contributed greatly to strengthening the trend towards studying the supply side and moving away from the demand side However, the Covid-19 shock brought us today in front of a complex economic event, where the pandemic is considered an external shock, and this shock has several channels for transmission into the economy of any country, namely: the supply shock channel, the demand shock channel, the trade shock channel, and the liquidity shock channel The severity of the transmission channels from another country varied according to the procedures followed and the financial and production capabilities of each country, and Algeria, like other countries of the world, was affected by all these channels, but our study It will try to address the transmission channel of the pandemic via demand shock.

1.1.The main question and sub-questions:

To address the issue of demand shock as a channel for transmission of the impact of an external shock as a result of the Covid-19 pandemic, we must not ignore the mutual effect between the multiple transmission channels. Here, the demand shock will be the result of the occurrence of the supply shock channel, and this is known as the effect of interchange between channels and for this we will ask the following main question: **Does the resulting decline lead The supply shock of the Covid-19 pandemic to a demand shock?**

1.2. Several sub-questions result from this question:

- * Is there a reciprocal relationship between the demand and supply channels for the transmission of the Covid 19 shock?
- * What is the nature of the demand shock to the Algerian economy as a result of the Covid-19 pandemic?

1.3.Hypotheses :

To answer the previous sub-questions, we put forward the following hypotheses:

- * Coronavirus transmission channels have a reciprocal effect, but the demand shock tends to be the result of the negative effects of the supply shock.
- * The demand shock to the Algerian economy is a negative shock.

1.4. Research importance :

The research is of great importance because it addresses an important dialectic, regardless of the nature of the external shock that is in our hands, represented by the Covid 19 pandemic, the importance of research is to know how it turns into an internal shock through the demand side, as well as the mutual effect between it and the supply side.

1.5. Research aims:

This research aims to determine the nature of the demand shock to which the Algerian economy was exposed, as well as the size of the mutual impact between the demand and supply side as two channels of transmission of the shock of the Covid 19 pandemic in Algeria.

1.6. Approach:

In our study, we will follow the deductive approach and its description tool by mentioning a number of economic concepts and analysis to interpret statistical data and the inductive approach and its statistical tool by addressing a number of statistics related to the pandemic period from January 2020 to July 2020.

1.7. Previous studies :

Many studies have dealt with the demand shock and the various implications of it before the outbreak of the Covid 19 pandemic, which is why most of the studies that followed this pandemic look at the demand shock resulting from external shocks, especially shocks external to the economic nature, such as natural disasters, wars and pandemics from a different angle In the following, we will deal with a number of these important studies in this aspect:

One of the most important studies that dealt with demand shocks We find a study (Antonio Gomes de Menezes, 2005) The external growth model

formed the intellectual starting point for this study where the focus was on the reflection of most internal trauma on Demand shock and then productivity rate, and this study differs from our study in terms of the source of the shock occurrence, as our study focuses on the Covid 19 pandemic, which is an external shock, and here is the difference between both studies. a study (Marcelo Pinheiro, 2008) This study deals with the manipulations carried out by some institutions in order to influence the optimism and pessimism of consumers, which would cause a demand shock, at first glance it appears that this study is not related to our study, but the emergence of different rumors On the penetration of certain products during the quarantine period in Algeria makes this study a good study for the explanation of the phenomenon of manipulating the state of panic in individuals during periods of epidemic shocks in order to cause a demand shock, As for studying (Veronica Guerrieri ,Guido Lorenzoni,Ludwig Straub,Ivàn Werning, 2020) This study deals with the mutual effect between the supply and demand shock channels when there are shocks of an external nature represented in pandemics. This study is very close to our study as we will try to drop some of the important variables of this study on the case of Algeria.

2.Demand shocks, their concept and effects:

We find the concept of demand shocks within the scope of the division of shocks according to the internal structure of the economy and include supply shocks and demand shocks, In what follows, we will deal with it in more detail.

2.1. Its concept:

where demand shocks are defined as: It is every change in the overall demand structure)bordelon(as a result of a sudden automatic increase due to the following reasons(2015 ، سعودي محمد) :

- Changing propensity to consume;
- Factors of optimism among investors;
- A decrease in interest rates;
- Increase public spending;
- Exports are more than imports.

Other additional reasons may also be added ، 2018 ، مهدي سهر الجبوري)
(صفحة 21):

- The spread of credit cards

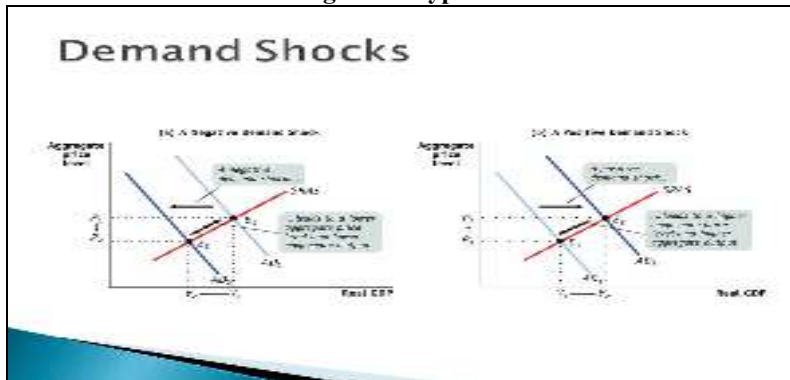
- Financial assets
- Technology developments
- Other political variables or the signing of free trade agreements.

Through this definition, we note the necessity to provide the condition of suddenness and promise the ability of individuals to anticipate, but it is noticed that before the Coronavirus pandemic, the effects of pandemics were not included as one of the reasons that lead to the change of the demand curve, but today it can be said that it has turned into a very important cause that cannot be overlooked.

2.2.Types:

Demand shocks are divided into two types: positive demand shocks and negative demand shocks, where the first leads to a rise in the demand curve to the right as a result of an emergency that encourages individuals to increase their demand, while a negative shock occurs as a result of a decline in individuals' demand based on a sudden event that leads to their pessimism or the decline of their financial accumulations and The following figure illustrates both shocks:

Figure 1: Types of demand shocks.



Source: Mr. Bordelon, Macroeconomics Graphs AP Economics , hope higgins , Photo copied from Google Image on: 10/09/2020.

2.3. Effects:

The effects of demand shocks are divided according to the time period following the occurrence of the shock into short-term and long-term effects. Below we deal with each of them in detail:

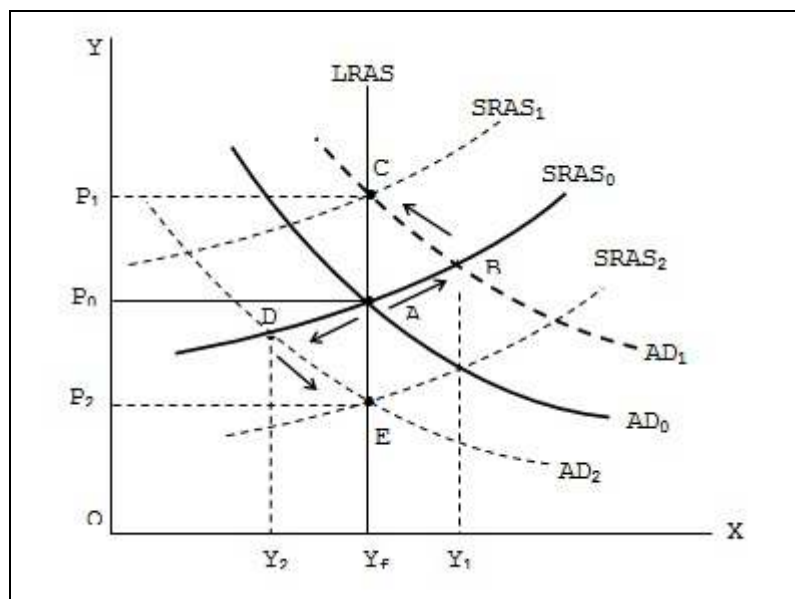
2.3.1. Effects in the short term:

Figure 1 above illustrates the types of demand shocks and their effects in the short term. A positive demand shock in the short term leads to an increase in production with an increase in the rate of inflation. The negative shock leads to the opposite, a decline in production with a decrease in the rate of inflation.

2.3.2. Long-term effects:

In order to illustrate the long-term effects of demand shocks, we will consider the following figure:

Figure 2: Long-term effects of a positive and negative demand shock



Source: site Economicshelpdesk, www.Economicshelpdesk.com

The occurrence of a positive shock in the demand curve as a result of an increase in money supply, for example, will first lead to higher production and inflation, but in the long term this rise in prices will push up production costs of raw materials and wages, which pushes the supply curve to the left (up), which leads to a decline Production to the initial full-employment states with the transition to a new equilibrium state from A to C, the main feature of which is the rise in the inflation rate to P1 while production remains at Yf, Which makes us assure that the impact of the demand shock wave in the long term is an increase in the rate of inflation, and vice versa in the short term, meaning a decrease in inflation without being affected by the volume of real production, In the case of a negative demand shock, the opposite will happen, where production decreases to Y2, and with it inflation decreases to lower levels, and with the decline in output to AS2, we will return to the equilibrium output Yf state with a decrease in the inflation rate at the valueP2, So in both cases, the effect of the demand shock in the long term is the change in the general level of prices, either an increase in the positive shock or a decrease in the negative shock.

2- 4.Covid-19 transmission channels through demand and supply shocks:

The Covid-19 pandemic is an external shock of a special nature, that is, it came from outside the economic system, as it does not express a specific defect in the economy, but rather a sudden event that caused the economy to witness several forms of imbalances, some linked to each other, as these shocks often cause a strong supply shock, except that these The pandemic also witnessed the occurrence of a demand shock as a reflection of the supply shock, and this is called the mutual effect between them. The following table explains this idea:

Table 1: Covid 19 shock channels in the French economy

supply shock effect	closure or near-stop of certain activities due to confinement	strong direct impact on precarious employment short (sector with very high employment activity)
	Very limited distribution possibilities for specialized shops, apart from the e-commerce circuit	massive consequences all along the production chains of durable goods and everyday consumption.

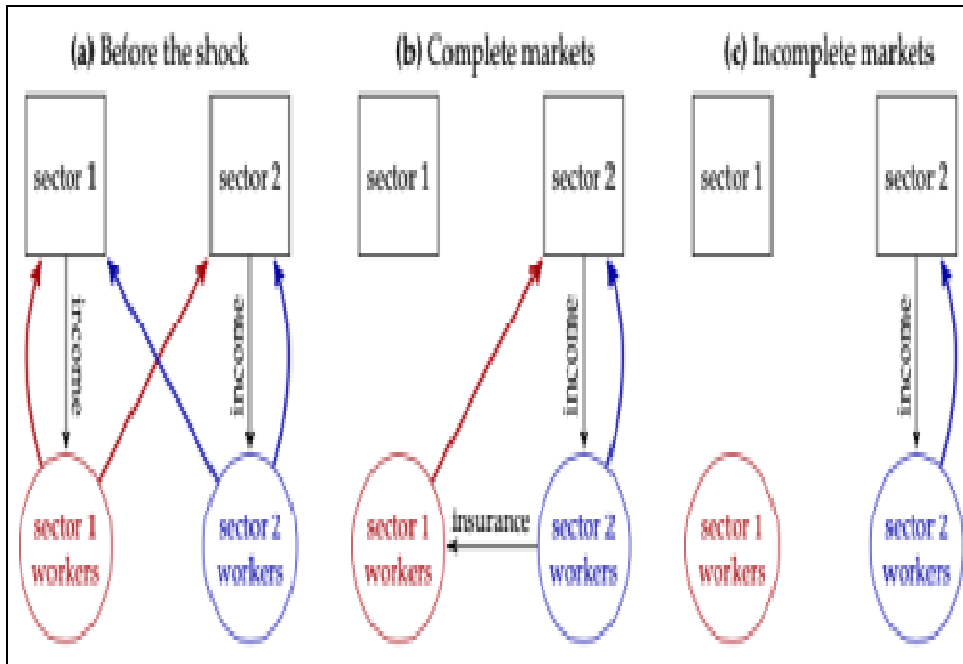
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	<p>very brutal deterioration of margins and treasury, increase in bankruptcies</p>	<p>the shock will weigh mainly in the short term on the operating account of companies</p>
	<p>restriction of the labor supply linked to measures of confinement and quarantine</p>	<p>effect which is only partially compensated by telework</p>
	<p>disruption of upstream supply chains + restriction of freight</p>	<p>risk of shortage and bidding on the prices of certain components</p>
	<p>restricted access to certain capital goods</p>	<p>weak effect in the short term and irrelevant in the long term</p>
demand shock effect	<p>investment freeze and high unemployment hiring (partial or not)</p>	<p>the sectors most exposed to confinement are service sectors (which is atypical), with a rapid adjustment of employment. partial unemployment will not be able to absorb all the shock</p>
	<p>Forced postponement of all consumption expenditure on undistributed goods and services (45% of consumption) diffuse effect on household confidence longer term</p>	<p>massive increase and strength of the savings rate</p>
	<p>slowdown in global demand (export circuit)</p>	<p>powerful effect of the multiplier of international trade</p>
mixed effect	<p>impact on the production of foreign subsidiaries of French groups</p>	<p>diffuse effect on the domestic economy of the deterioration of the consolidated accounts of national and foreign groups established in French (50% of market employment reside)</p>

Source :oliver passet, alberto balboni, covid-19 la contagion sectorielle de l'économie réelle,p15,2020,xerfi,paris ,www.xerfi.com.le 30/08/2020.

Through Table 1, which deals with the channels of the impact of the Covid-19 shock on the French economy, it is evident that the supply shock is the most influential channel, followed by the demand shock channel, which is reflected in the high volume of unemployment and the decrease in deposits with an increase in the foreign trade multiplier. There is also a common channel of influence between the supply and demand shocks, which is the decline of native foreign investment by half, all of these elements prove that the channels of the Covid-19 shock have an overlapping effect, but it is clear that the supply shock is what leads to the sharp decline in demand that may reach the shock level. This is what was indicated by a study (Veronica guerrieri guido,Lovenzoni ludwing,Straub ivan werning, 2020), which is shown in the following figure:

Figure 3: The impact of a negative supply shock on demand



Source: Veronica Guerrieri, Guido Lorenzoni, Ludwing Straub, Ivàn Werning, Macroeconomic Implication Of Covid 19:-Can Negative supply Shocks Cause Demand Shortages?, national bureau of economic research ,usa,2020,p3.

Through the previous figure, it can be said that the negative supply shock may not have a clear effect in the very short term, but the length of the closure measures push towards a sharp decline in demand as a result of lost demand from the closed sectors, and here it must be emphasized that the sharp decline in demand turns into a negative demand shock from During the decline in individual incomes and incurring additional expenses related to food and medical supplies for the pandemic. The impact of the negative supply shock on demand can be divided into two phases, the first stage in which the economic agents of the sector affected by the shock (stalled) have the financial capacity to allow the continuation of the demand coming from them, the second stage: which is the depletion of all the savings of these economic agents and thus the market loses their demand, and this The stages are related to the timeframe of the pandemic and to the closure procedures, as the first phase is often in the very short term period, i.e. the beginning of the pandemic, but the second phase is in the medium term, at least some months of the pandemic, Here it should be noted that this decline turns into a negative demand shock due to several factors:

- including: Market narrowness and limited sectors involved in it.
- The inability of the financial and monetary authorities to provide financial packages to help the affected people.

4-The demand shock of the Covid-19 pandemic, the case of Algeria:

The demand side in Algeria is of great importance due to its use as a mechanism to achieve economic stability through all economic policies, whether fiscal, budget or budgetary policies, and even monetary policy due to the prevailing treasure trends. Economic decline and stagnation and to diagnose this situation, we will address the nature of demand before the Covid-19 pandemic, then determine the impact of the pandemic on the demand side, leading to determining the nature of the imbalance in demand and whether it reaches the level of negative shock.

4.1: The volume of demand in Algeria, before the Covid-19 pandemic:

To determine the size of the demand before the Covid-19 pandemic, we will divide it into an effective request related to the processing expenses in the state budget and the consumption demand related to the rest of the economic agents:

4.1.1. Effective demand(investment demand):

The control of the ideological orientation based on circumstantial policies, especially the expansionary spending policy through the concept of effective demand, made me mean the first branch of demand with effective demand, which is mainly the final consumption of public administrations, which includes the processing expenses and the rest of the operating expenses that fall within the scope of effective government demand, namely All operating expenses except the mass of wages, and this request is reflected to form for us the formation of fixed capital, which we call investment capital, and the following table between each of them:

Table2: Effective demand during the period 2016-2019, Unit: billion dzd

Years	2016	2017	2018	2019
Equipment expenses	2500	2523.8	4043.3	3602.7
Final consumption of public administrations	3658.77	3577.11	3508.07	3461.78
Rough fixed capital formation	7544.33	7697.95	8211.26	7904.60

Source: Ministry of Finance data including expenditures actually embodied in the year 2019, the expenditures of the Finance Law were recorded

The data related to Table 4 can be divided into two branches: effective demand and investment demand, and they are explained as follows:

***Effective demand:**

It represents the final consumption values of public administrations and the values of processing expenditures. What we call economically by effective demand. What is observed through the table is the continuous expansion of processing expenditures, albeit at an unstable pace, as we notice their rise in 2018 as a result of following the policy of quantitative easing with a resumption of decline in 2019, however it remains at high levels It includes economic dynamism and this is evident from the governorate of final consumption of public administrations at the same levels during the period 2016-2019.

*** investment demand:**

The values of fixed capital formation represent the investment demand and it reflects the ability of the economic agents to achieve surpluses that are exploited in the investment process. The values from 2016-2019 show the continued achievement of progressive values in this aspect supported by government spending on infrastructure (ons, 2020).

4.1.2. Consumer spending for families:

The consumption demand of families and institutions includes the sum of incomes represented in wages, rents, transfers and subsidies, as we will rely in this study on the incomes included in the budget, which is the mass of wages of public employment, as well as the total of social transfers, as well as tracking the volume of consumption of families during the period 2012/2019 This is covered in the following table:

Table 3: Total consumer demand during the period 2016-2019, Unit: billion dzd

An	2016	2017	2018	2019
Family consumption	74460.52	80342.21	8568.25	8886.38
Wage compensation	5308.2	54393.48	5517.07	5749.81

SOURCE:ONS Economic Accounts Report for the period 2016-2019

Through the above table, we note that the volume of consumer demand has maintained a continuous and permanent growth rate, even within small limits, except that it is positive, and thus it guarantees economic mobility that does not make the economy enter a state of economic recession and it derives its strength from successive increases in the wage mass, knowing that this increase is linked More in the economic sector than in the public administration sector, since we know that the latter has not witnessed wage increases since 2010.

4.2. The shock of demand from the COVID-19 pandemic :

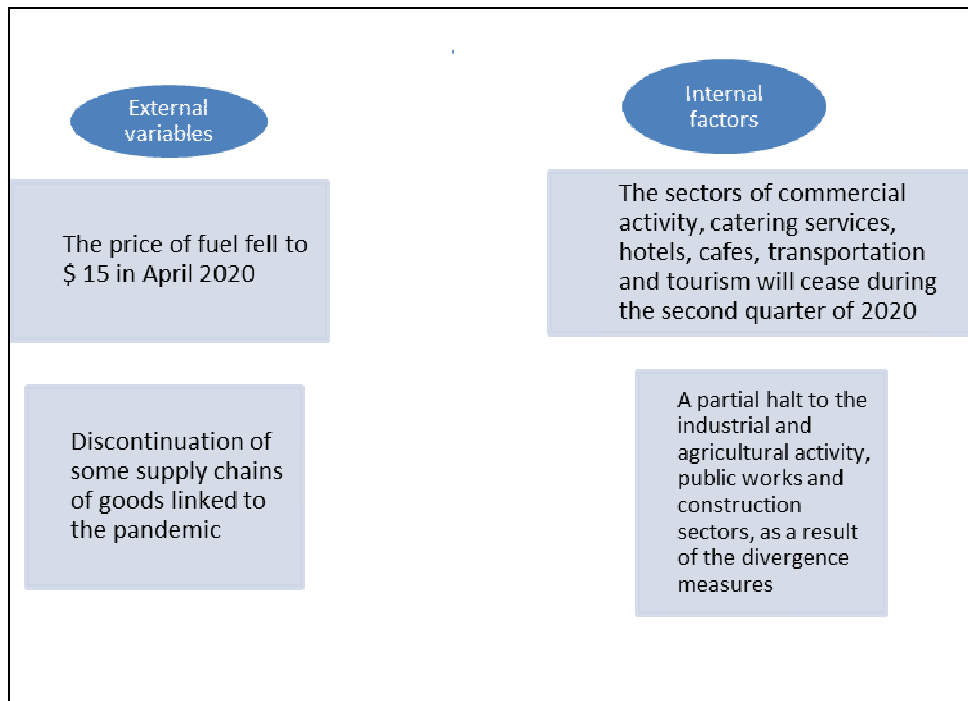
With reference to figure 3, the sectors that have stopped their activities and the reflection of this drop on the demand side should be identified:

4.2.1. The most important sectors that have stopped as a result of the Covid 19 pandemic:

The Covid 19 pandemic has several channels to affect the supply side, including internal and external ones, where the first is in the sectors that have been affected by closures and social distancing decisions, and the second is related to the decline in fuel prices in the international market, which leads to a decline in revenues from oil collection and deepening the

deficit in the trade account For the balance of payments The following figure shows the total affected sectors:

Figure 4: Sectors Affected by the COVID-19 Pandemic



Source: Prepared by the researcher based on the data of the National Bureau of Statistics, the first tripartite report 2020

4.2.2. Aspects of Demand Shock:

The aspects of the demand shock, if any, do not deviate from the previous axes of dividing the demand, which are effective demand (investment demand) and consumer demand, where the first is related to government spending that comes largely from oil collection revenues and from it it is sensitive to external variables, while the second section is related to the size of income and from it is highly vulnerable With internal variables.

4.2.2.1: Aspects of Effective Demand Shock (Investment Demand):

Since effective (government) demand is linked to spending and from it to the amount of revenues, the most important variable affected by the Covid pandemic is revenue collected, whether from oil collection or from regular

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collection, as the first was affected by the decline in oil prices (ahmed bairech,azzedin attia, 2019), which we called the effect of being affected by external factors, while the second was affected by the state of closure and The losses that affected economic dealers, which we called the internal factor, all of this prompted the authorities to adopt a supplementary financial law for the year 2020 as a reflection of the pandemic and its most important features are the reduction of spending. The following table shows the size of the decline in revenues and the consequences of it from the decline in expenditures, especially processing expenses:

Table4: Effective demand changed during the second semester of 2020, Unit: billion dzd

	Finance Act 2020	Supplementary Finance Act 2020
Oil tax revenues	2200.3	1394.7
Ordinary tax revenues	3046.9	2858.6
equipment expenses	2929.7	4752.4
Operating expenses	4893.4	2620.3

Source: Report of the Prospective Directorate of the Algerian Ministry of Finance on the Complementary Finance Law 2020 Site:www.imf.dz.com .10.09.2020

From the above table, we conclude that the Corona pandemic reduced the size of the projected financing for the budget to the extent that the oil revenues received an amount of 805.6 billion dzd and the regular tax revenues amounted to 71.1 billions dzd, bearing in mind that the amended oil levy in the supplementary finance law is within the limits of a 30 dollar per barrel, a price in line with expectations. The pessimism that appears to be correct so far, within the month of September of 2020, according to the oil market data. This is reflected in the total expenditures, which will be reduced by 450.7 billion dzd. It is also worth noting here that the decrease in operating expenses is mainly related to the effective demand of the government away from the wage mass that was not affected.

Despite all these negative data, it can be said that the volume of government spending is still high in a way that ensures the continuity of effective demand despite the recorded decline, but we could be facing a demand shock in the event of a prolonged pandemic and a return to a second closure before the end of the year and the decline in oil prices less than 30 Dollars, this would push towards a sharp decline in spending to levels lower than

recorded, and could not reflect only a small percentage of the expenditures recorded under the provision of supplies, so we face a demand shock situation linked to effective demand.

4.2.2.2. Family consumer demand shock side:

The family consumption is reduced by the income variable, which can be divided during the pandemic period into two types: the first maintained the same previous values without change or interruption, which are wages associated with the public sector. The second type is incomes associated with the private sector or profits from commercial activities. And support for these activities, but the subsidy amounts are insignificant compared to the incomes that these people actually receive, and the following is a table showing the size of the decline in wages according to the affected sectors:

Table 5: The value of the wage decline as a result of the pandemic, Unit: billion dzd

Sector	Case	The size of wages before the pandemic 2019	The size of wages during the pandemic2020*
The public sector (Administration sector)	Not affected	3125.3	3125.3
Agriculture sector	Not affected	333.6	333.6
The economic sector except agriculture	He was greatly affected	2290.9	1145

Source: Prepared by the researcher with reliance on the National Bureau of Statistics report, the Economic Accounts Report for the year 2019.

* Expectations prepared by the researcher according to the nature of the sectors affected by the closure procedures.

Through the above table, it appears that the size of wages will be affected by the pandemic will be limited to industrial activity by a decrease in the limits of half. These data do not lead us to say that this decrease constitutes a shock to the demand, but rather a decline that does not reach the limits of the shock. Expected out wages and the following table explains this:

Table 6: Returns change during the second semester of 2020, Unit: billion dzd

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Sector	Case	The size of wages before the pandemic 2019	The size of wages during the pandemic2020*
The housing sector	He was greatly affected	105.9	50
Agriculture sector	Not affected	2178..7	2178
The economic sector except agriculture	He was greatly affected	4210.5	2100

Source: Prepared by the researcher with reliance on the National Bureau of Statistics report, the Economic Accounts Report for the year 2019.

* Expectations prepared by the researcher according to the nature of the sectors affected by the closure procedures.

Through this table, it appears that the volume of incomes outside wages is more affected, especially in the economic sector and the housing sector. These expectations remain without a state of shock. However, any occurrence of a second wave of the epidemic may push towards the same measures of closure and quarantine that may deepen the losses and here we are in front of A negative request shock case.

5.Conclusion :

We have concluded in our study that the Covid 19 pandemic has several channels that allow it to transform from an external shock to an internal shock. With our focus on the demand side, we have shed light on the aspects that may push towards a negative shock as a result of this pandemic. The study concluded the following:

- The diversity of factors affecting demand as a result of the outbreak of the pandemic, as it was divided into internal, dependent on wages and incomes of economic agents, and external, focusing on the impact of the decline in general budget revenues related to oil revenues.
- The study also concluded that there is no negative shock to demand and that the situation is limited to a sharp decline. However, in the event of a second wave of the epidemic with a return to the state of quarantine, we will be facing a demand shock as a result of the decline in oil prices below the budget price set at \$ 30, which leads

to a shock in effective demand. On the one hand, on the one hand, losses in the economic sector will deepen, and many supporters will lose a larger portion of their income than expected, and consequently, a negative shock will occur in the family's consumer demand.

As for testing the hypotheses, they are as follows:

- * The first hypothesis is correct, except that the external factor related to the international market for oil prices must be added to it.
- * The second hypothesis is wrong, as until the second quarter of 2020, the Algerian economy is witnessing a state of decline in demand that does not reach the shock limit, but any second wave of the epidemic may make the hypothesis correct.

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