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Investigation about the main effects of the COVID-19 pandemic on the performance of MOLDOVA firms

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Abstract:
This paper investigates the impacts of COVID-19 pandemic on businesses at the firm level for a sample of 360 companies in Moldova. Using data from the Beeps data sets in 2020. Following the analysis of the information collected, the effect of COVID-19 pandemic on MOLDOVA firms touched different sides such as finance, sales and labour. Starting with the closure of the majority of the firms in MOLDOVA for period until 9weeks, the pandemic causes a decrease in the worked hours per week followed by a decrease in the firm's sales that push the firms to fall in arrears in the outstanding liabilities, delay payment for different parts, decrease in all of cash flows and a decrease in the demand for the products and services of the firms. As expectations of the study, the sales and work-force of the Manufacturing firm are more appropriate to get back to normal comparing with the other firms. The study recommends reduction of tax regulations and removing trade restrictions for firms to cope with the pandemic.

Keywords: COVID-19 pandemic, MOLDOVA, firm, performance, BEEPS data.
JEL classification: L25, H12, D22

Introduction:

The first important event of the 2020 is the COVID-19 pandemic. COVID-19 is crises that have great shock on health, social and economic[2]. It is a real human, social and economic crisis that has attacked the core of human existence.[3] It continues to spread uncontrollably around the world, as of July 14th, 2020, 12.964.809 confirmed cases w with 570288 confirmed deaths[4]. The COVID-19 pandemic has had dramatic rippling effects across global economic activities in

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every area in the world[1]. In response to COVID-19 pandemic outbreak, many leaders around the world decided to save their countries, their employees, their establishments through declaring a sudden or phased lockdown. Several countries across the world have imposed widespread restrictions (e.g., lockdowns, quarantines, and closure of physical shops and businesses) to protect the functioning of healthcare systems[2]. Also, some policies such as social distancing and staying at home were implemented directly which damaged several businesses across industries in the world[3]. According to the World Trade Organization[4], COVID-19 pandemic precipitated a global financial and economic crisis. As a result, latest expectation has predicted that world trade will fall by between 13% and 32% in 2020 due to the COVID-19 pandemic[5]. COVID-19 pandemic has severe negative impacts on the global economy[6]. Major economies will lose at least 2.4 percent of the value their gross domestic product (GDP) over 2020, leading economists to already reduce their 2020 forecasts of global economic growth down from around 3.0 percent to 2.4 percent[7]. The first confirmed case in Moldova was on march 7, 2020[8]. In this paper, we present the effects of COVID-19 pandemic on the small business in MOLDIVA basing on a survey run on Moldova firms in the period November 2019 and April 2020.

1 Theoretical background and Literature review:

The crisis has an important effect on business[9]. The COVID-19 crisis is generating spill over effects throughout global and regional supply chains, disrupting demand and supply[10]

Increasing the length of the lockdown and travel restrictions (national and international) are severely affecting the global economy in general. The prolonged lockdown period increases the risks of a massive increase in corporate and governmental debts that lead to fundamental financial imbalances that could prolong the recovery period from the COVID-19 crisis[11]. Many companies are

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facing bankruptcy, or reducing their production capacity due to the closure of the economy, that has increased the risks associated with investments by households and businesses[1]. The activities involving direct contact between consumers and service providers have been adversely affected by restrictions on movements and social distancing.[2] Additionally, social distancing policies have almost destroyed service industries, like travel and tourism and hospitality, which could trigger a recession[3].

Also, the crisis have a negative impact on labour and employment[4]. The COVID-19 crisis has affected around 3.3 billion employees. To solve the emerging problem of COVID-19 pandemic, different firms are embracing new methods and processes that are responsive for the situation[5]. During the period of COVID-19 pandemic, different businesses are working faster to ensure competitive advantages[6]. The severe global challenges posed by COVID-19 can be tackled using a range of digital technologies, like the Internet of things, artificial intelligence, big data analytics, and drones[7]. Different firms are switching to new operating models focused on the customer.[8][9] Different firms are pushed to create new products and launch new services that are radically adapted in order to remain visible, agile and productive[10]. Therefore, we will try in this paper to investigate about the main effects of COVID-19 pandemic mon the performance of the firms in MOLDOVA using data from BEEPS dataset of 2020.

2 Aim of the paper:

The aim of this paper is to critically analyse the effects (impacts) of COVID-19 pandemic on businesses in the firm level. The firm is a group of related operation, that are executed for the benefit of the firm itself. It contains all of department of

[1]Bofinger, P., Dullien, S., Felbermayr, G., Fuest, C., Hüther, M., Südekum, J., & Weder di Mauro, B. (2020). Economic Implications of the Corona Crisis and Economic Policy Measures. *Wirtschaftsdienst*, *100*(4), 259-265. https://doi.org/10.1007/s10273-020-2628-0

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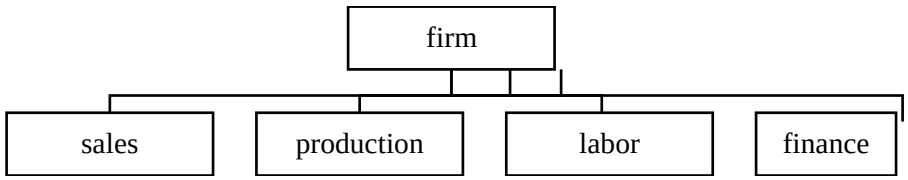
sales, production, employment and labour, finance. The figure below represents the structure of every firms in general.

Figure 1: Structure of the firm in general



Source: edited by the authors

Following this figure, the firm contain at least the department mentioned in the figure. Department of sales, department of production, department of labour and department of finance. Each department of the firms has its own activities. If there is an extern factor that affect the firm, so it will affect directly or indirectly the different departments. Therefore, in the section results and discussion, we will discuss the effect of COVID-19 pandemic in different department of MOLDOVA firms.

3 Data and methodology:

The data used in this paper is based on a questionnaire using computer assisted telephone interviews CATI. It is a questionnaire-based representative sample survey conducted in the state of MOLDOVA. The total sample was 360 interviews. The interviews took place from 19th to 29th of May, 2020. The sample is representative of all establishment in the country in three important economic activities that are **manufacturing**, **retailing** and **services**.

4 Results and discussion:

The paper is based on a survey run on MOLDOVA firms in the period of November 2019 to April 2020. The sample of the study is based on BEEPS data composed of firms from MOLDOVA country. The firms of the sample operate in three important sectors that are manufacturing firms, retailing and services firms. This section of the study will present the statistics about the responses of the owners/top managers about the effects of COVID-19 pandemic on different sides of the firms that are sales of the firms, production, finance, policies of the firms and finished with the expectation after the pandemic. To measure the impact of COVID-19 pandemic on the firms, the study is based on simple descriptive analysis. The Table 1 presents repartition of the sample per sector of activity.

Table 1: Repartition of the sample per sector of activity

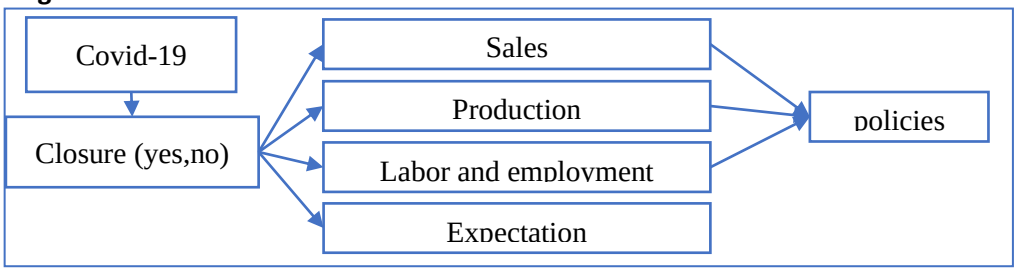
Sector	Frequency	per category (%)
Manufacturing	184	51.11
Retail	82	22.78
Services	94	26.11

Source: edited by the authors using BEEPS data

Table 1presents descriptive statistics for variables and measures included in the analysis. As it is presented in the Table 1, the majority of the firms of the sample exercise in manufacturing sector with 51.11% of the firms followed by 26.11%. of the firms that exercise services sector. However, retailing firms represent third place for firms that exercise retailing (22.77%). The COVID-19 pandemic pushes different firms in the world to close for a period of time. This closure has an effect on the department of the firms. Figure 2 below demonstrate a model about the following steps of the study. After the closure of the firms, it will affect the

different department that will foster the owner/top manager to look for policies and solutions. However, there will be always expectations in the case of huge effect of the pandemic on the firm.

Figure 2: Model of the COVID-19 effect on the business life of MOLDOVA firms



Source: edited by the authors

4.1 Effect of COVID-19 pandemic on the sales of the firms:

Covid-19 outbreak affects the entire world in different sides. For the effects of the pandemic on the firms, we will start with the effect of the effects on the sales

Table 2: Contingence table between sector and number of weeks that has been closed due to COVID-19

	Less than 3 weeks		4 to 6 weeks		7 to 9 weeks		10 to 12 weeks	
	%	N	%	N	%	N	%	N
Manufacturing	4.72%	17	5.00%	18	40.00%	144	1.39%	5
Retailing	1.11%	4	3.89%	14	16.67%	60	1.11%	4
Services	5.00%	18	4.44%	16	15.56%	56	1.11%	4
Total	10.83%	39	13.33%	48	72.22%	260	3.61%	13

Source: edited by the authors using BEEPS data

As it is mentioned in Table 2 , majority of the firms (72.22%) has been closed due to the COVID-19 pandemic for a period between 7 to 9 weeks. This closure was a response for the government policies to face against COVID-19.

Table 3: Effect of COVID-19 pandemic on the sales rates of the firms

	Increase		The same		Decrease	
	%	N	%	N	%	N
Manufacturing	1.39%	5	1.39%	5	48.33%	174
Retailing	1.94%	7	1.94%	7	18.89%	68
Services	0.28%	1	1.67%	6	24.17%	87
Total	3.61%	13	5.00%	18	91.39%	329

Source: edited by the authors using BEEPS data

As a response of the question to understand the effect of COVID-19 outbreak on the sales of the firms. Table 3 shows that 91.38% of the firms mention that the sales decrease comparing with the same month in 2019. This means that COVID-19 pandemic outbreak has a negative impact on the firm's sales of all sectors. Comparing between different sectors, manufacturing firms are the most influenced by the COVID-19 outbreak because there bases on active employees. In the second place, services firms with sales decrease represent 24.17% of all firms. Retailing firms are the less affected by the COVID-19 outbreak

Table 4: Effect of COVID-19 outbreak on the decrease on firms' sales

	0%		1-20%		21-40%		41-60%		61-80%		81-100%	
	%	N	%	N	%	N	%	N	%	N	%	N
Manuf	2.78	10	2.22	8	7.22	26	5.00	18	5.00	18	28.89	104
Retailing	3.89	14	0.83	3	4.44	16	2.50	9	3.06	11	8.06	29

Services	1.94	7	3.33	12	3.89	14	5.28	19	4.44	16	7.22	26
Total	8.61	31	6.39	23	15.56	56	12.78	46	12.50	45	44.17	159

Source: edited by the authors using BEEPS data

As can be seen from the Table 4 above, more than 44% of the firms of the sample had a sales decrease due to the COVID-19 outbreak with more than 80% comparing with the sales of same month last year. 28,89% of this rate are manufacturing firms. This data mention that sales of manufacturing firms are the most sales touched with the COVID-19 outbreak followed by the sales of retailing firms with. However, just 8.61% of the firms in the sample had not been influenced by the pandemic.

Table 5: Effect of COVID-19 pandemic on Direct exports of the firm

	0%		1-20%		21-40%		41-60%		61-80%		81-100%	
	%	N	%	N	%	N	%	N	%	N	%	N
Manufacturing	42.78	154	1.11	4	1.11	4	0.83	3	1.11	4	4.17	15
Retailing	22.50	81	0.28	1	0.00	0	0.00	0	0.00	0	0.00	0
Services	24.72	89	0.56	2	0.28	1	0.28	1	0.00	0	0.28	1
Total	90.00	324	1.94	7	1.39	5	1.11	4	1.11	4	4.44	16

Source: edited by the authors using BEEPS data

It can be seen from the data Table 5 that the proportions of firms exporting directly in the period of COVID-19 outbreak are so low, where 90% of the firms in the sample did not have direct export. However, the last 10% of the sample had different rates of direct export due to their sector of activity where just 4.44% of all the sample had a direct export the extend 80%. these data mention that the COVID-19 outbreak have a massive effect on the export of MOLDOVA firms

Table 6: The direct export of firms before and during the COVID-10 pandemic

Category	Frequency per category	Frequency per category (%)
Does not export	324	90.00
Increase	4	1.11
Remain the same	1	0.28
Decrease	31	8.61

Source: edited by the authors using BEEPS data

Comparing the percentage of direct and indirect exports in the last completed month (before the survey) that is April 2020 with the same month in 2019, majority of exporting firms that are 31 firms from 36 exporting firms had a decrease in the rates of sales. This decrease is because of to the consequences of COVID-19 outbreak

4.2 Effect of COVID-19 pandemic of Production activities:

To answer the question: Has this establishment adjusted or converted, partially or fully, its production or the services it offers in response to the COVID-19 outbreak? Table 7 presents response of the firms of the Sample in MOLDOVA.

Table 7: Effect of COVID-19 pandemic on the activity of the firm

	Yes		No		Total	
	%	N	%	N	%	N
Manufacturing	6.94	25	44.17	159	51.11	184
Retailing	3.61	13	19.17	69	22.78	82
Services	4.72	17	21.39	77	26.11	94
Total	15.28	55	84.72	305	100.00	360

Source: edited by the authors using BEEPS data.

Responding to the question: Has this establishment adjusted or converted, partially or fully, its production or the services it offers in response to the COVID-19 outbreak? Table provides an overview of the production function in the firm's members of the sample during the COVID-19 outbreak. The results display that 84.72% of the firms did not adjust or convert its production on response to the COVID-19 outbreak; however, 15.28% has adjusted or converted its product as a response to COVID-19 outbreak. Manufacturing firms are the most influenced

Table 8: Effect of COVID-19 pandemic on some activities of the firm

		Increase		Remain the same		Decrease		Total	
		%	N	%	N	%	N	%	N
Total hours worked per week	Manuf	1.39	5	3.89	14	45.83	165	51.11	184
	Retailing	0.00	0	5.28	19	17.50	63	22.78	82
	Service	0.00	0	7.50	27	18.61	67	26.11	94
	Total	1.39	5	16.67	60	81.94	295	100.00	360
The demand for the firm's products and services	Manuf	1.39	5	4.44	16	45.28	163	51.11	184
	Retailing	1.67	6	2.22	8	18.89	68	22.78	82
	Service	0.56	2	4.72	17	20.83	75	26.11	94
	Total	3.61	13	11.39	41	85.00	306	100.00	360
Supply of inputs, raw materials, or finished goods and materials purchased to resell	Manuf	0.56	2	8.33	30	42.22	152	51.11	184
	Retailing	1.67	6	4.72	17	16.39	59	22.78	82
	Service	0.83	3	8.33	30	16.94	61	26.11	94
	Total	3.06	11	21.39	77	75.56	272	100.00	360

Source: edited by the authors using BEEPS data.

Erreur ! Source du renvoi introuvable. above illustrates that the COVID-19 outbreak had a great negative impact on the firms of Moldova country. For the total hours worked per week, 81.94% of the firms had a Decrease in the total hours worked per week. However, just 1.39% of the firms has an increase in the total hours worked per week during the period of COVID-19 pandemic This rate mention that the COVID-19 pandemic has a great influence on the activity of the firms. 85% of the firms had a decrease in the demand for firms' products or services (the customers focused their demanded on the essential thing such as drugs and food) therefor, 13% of the firms had an increase in the demand for their product and services. Also, 75.56% of the firms had a decrease in their raw materials, finished goods and materials purchased to resell. Following these results, majority of the respondents to the questioner said that the COVIC-19 pandemic has a strong negative impact on the activity of their firms

Table 9: Changes of the firms due to COVID-19 pandemic

		Yes		No		Total	
		%	N	%	N	%	N
Started or increased business activity online	Manufact	8.33	30	42.78	154	51.11	184
	Retailing	8.33	30	14.44	52	22.78	82
	Services	6.11	22	20.00	72	26.11	94
	Total	22.78	82	77.22	278	100.00	360
Started or increased delivery or carry-out of goods or services	Manufact	6.39	23	44.72	161	51.11	184
	Retailing	7.78	28	15.00	54	22.78	82
	Services	4.44	16	21.67	78	26.11	94
	Total	18.61	67	81.39	293	100.00	360
Started or	Manufact	10.28	37	40.83	147	51.11	184

increased remote work arrangement for its workforce	Retailing	8.89	32	13.89	50	22.78	82
	Services	10.00	36	16.11	58	26.11	94
	Total	29.17	105	70.83	255	100.00	360

Source: edited by the authors using BEEPS data.

Facing against COVID-19 pandemic, different firms launch new policies in the aim of curving the fall out. Therefore, following the experiences of the policymakers (CEO or managers of the firms), the firms start to execute new activities. To prevent the transmission of the COVID-19 VIRUS, more than 22% as it is presented in **Erreur ! Source du renvoi introuvable.** of the firms started or increased an online business activity. This operation allows both sides of the business activity to meet online and executing the operation (sell and buy) without moving from their places. In addition, the financial online operation facilitates these procedures. In the second point to hamper the transmission of the virus, more than 18% of the firms started or increased delivery or carry-out of goods or services that allow the customer to receive the goods or services at home without moving to the offices. Following the fast transmission of COVID-19 virus, more than 29% of the firms started or increased remote work arrangement for its workforce. This latest facilitates the operation by allowing the employees to work from their homes (for the jobs with computer such as accountability, marketing, communication, Customer relationship management …etc.). The business activity online reduces the overcrowding of the employees in the firms that will hamper the transmission of the virus.

Table 10: Cross table: Sector of activity and share of online sales on total sales

	0%		1-20%		21-40%		41-60%		61-80%		81-100%	
	%	N	%	N	%	N	%	N	%	N	%	N
Manufact	43.61	157	5.83	21	0.83	3	0.28	1	0.00	0	0.56	2
Retailing	15.56	56	5.00	18	0.56	2	1.11	4	0.28	1	0.28	1
Services	20.83	75	3.33	12	0.56	2	0.28	1	0.00	0	1.11	4
Total	80.00	288	14.17	51	1.94	7	1.67	6	0.28	1	1.94	7

Source: edited by the authors using BEEPS data

After the execution of new procedures in response of COVID-19 outbreak, **Erreur ! Source du renvoi introuvable.** presents the share of the establishment's online sales on the total sales. The data presented in the table shows that more than 94% of the firms has a share less than 20% of online sales on total sales. This reflects the few number of establishments that launch the business activity online (see **Erreur ! Source du renvoi introuvable.**, less than 23% of the firms). However, less than 2% of the establishments of the sample have a share more than 80%.

Table 11: Share of the firm's workforce working remotely

	0%		1-20%		21-40%		41-60%		61-80%		81-100%	
	%	N	%	N	%	N	%	N	%	N	%	N
Manufact	40.83	147	8.06	29	0.56	2	0.83	3	0.00	0	0.83	3
Retailing	15.56	56	5.83	21	0.28	1	0.56	2	0.56	2	0.00	0
Services	16.94	61	6.67	24	0.28	1	0.83	3	0.00	0	1.39	5
Total	73.33	264	20.56	74	1.11	4	2.22	8	0.56	2	2.22	8

Source: edited by the authors using BEEPS data

Following the government policies to face the COVID-19 pandemic, different firms and administration launch new policies of working such as working remotely. **Erreur ! Source du renvoi introuvable.** presents the share of MOLDOVA

firm's workforce working remotely. The data mention that 73.33% of the firms doesn't launch this type of working due to the activity of the firms, that are need the presence of the firms. We find that 40.83% of these firms are manufacturing firms. However, there are firms that make until 100% of the workforce work remotely. These results mention that there are firms that are using high technology in their workforce in the aim of do not firing employees

Table 12: Effect of COVID-19 pandemic on permanent and temporary workers.

		Increased		Remained the same		Decreased		Total	
		%	N	%	N	%	N	%	N
Permanent workers	Manufact	0.83	3	45.56	164	4.72	17	51.11	184
	Retailing	0.00	0	18.33	66	4.44	16	22.78	82
	Services	0.28	1	22.78	82	3.06	11	26.11	94
	Total	1.11	4	86.67	312	12.22	44	100.00	360
Temporary workers	Manufact	0.00	0	50.00	180	1.11	4	51.11	184
	Retailing	0.00	0	22.22	80	0.56	2	22.78	82
	Services	0.00	0	26.11	94	0.00	0	26.11	94
	Total	0.00	0	98.33	354	1.67	6	100.00	360

Source: edited by the authors using BEEPS data

Following the distancing obligation, many first firms launch different policies to face against the pandemic. This latest affect the number of the workers of the firms. Following the data presented in Table 12, the majority of the firms have not any change in the both permanent and temporary workers (86.67% and 98.33% respectively). However, there are some firms that are had affected with the pandemic. These latest firms had a decrease in the both permanent and temporary worker (12.22% and 1.67% respectively). Comparing between the sector of the firm, manufacturing firms are the most affected with COVID-19 in the number of the workers.

Table 13: Number of the firms where their workers quit or took leaves

Categories	Frequency per category	Frequency per category (%)
0 worker	313.000	86.94%
1 to 20 workers	42.000	11.67%
21 to 50 workers	4	1.11%
More than 50 workers	1	0.28%

Source: edited by the authors using BEEPS data

Following the data presented in Table 12, the rates of employment in the firms of MOLDOVA is affected with the COVID-19 pandemic. Therefore, to select the different types of the effect is presented in the tables below. The Table 13 presents the number of the firms that their workers quit or took leaves. As it presented in the Table 13, 86,86% of the firms does not have workers that qui or took leave. This is a good sign that the COVID-19 pandemic did not oblige the firm's managers to fire their employees. However, there were 11.67% of the firms that quit or took leave. Where, there is a firm that quite and took more than 50 workers leaves.

Table 14: The firms with workers have been laid-off due to the COVID-19 outbreak

Categories	Frequency per category	Frequency per category (%)
0	352.000	97.78
1 to 20 workers	7.000	1.94
More than 20 workers	1.000	0.28

Source: edited by the authors using BEEPS data

The Table 14 mentions that 97.77% of the firms of the sample does not have workers who have been laid-off dur to the COVID-19 outbreak. This explanation joins the explanation of the Table 13, that the COVID-19 does not have a strong effect of the workforce of the firms

Table 15: The firms with worker who have been furloughed due to COVID-19

Categories	Frequency per category	Rel. Frequency per category (%)
0	252	70.00
1 to 20	77	21.39
21 to 50	18	5.00
51 to 100	7	1.94
More than 100	6	1.67

Source: edited by the authors using BEEPS data

Following the policies of the state to face COVID-19 pandemic, and to do not fire the employees, some firms prefer to make their employees to have been furloughed for a period of time rather than firing them. There for, the employees of 70% of the firms have not been furloughed due to COVID-19 pandemic. However, 30% of the firms take this policy where 1.67% of the firms of the sample make more than 100 of their employees furloughed.

4.3 Effect of COVID-19 pandemic on the Finance of the firm

After studying the effect of COVID-19 pandemic on the sales and production of the firms of MOLDOVA, the financial side of the firms is influenced also with the pandemic. Table 17 presents the effect of COVID-19 pandemic on some parts of the financial activities in the firms of MOLDOVA;

Table 16: The response of liquidity, sales on credit and purchase on credit of the firm to the covid-19

		Manufact		Retailing		Service		Total	
		N	%	N	%	N	%	N	%
Cash flow	Increased	4	1.11	5	1.39	1	0.28	10	2.78
	Remained the same	16	4.44	10	2.78	15	4.17	41	11.39
	Decreased	164	45.56	67	18.61	78	21.67	309	85.83
	Total	184	51.11	82	22.78	94	26.11	360	100.0
Sales on credit	Increased	4	1.11	1	0.28	5	1.39	10	2.78
	Remained the same	155	43.06	48	13.33	62	17.22	265	73.61
	Decreased	25	6.94	33	9.17	27	7.50	85	23.61
	Total	184	51.11	82	22.78	94	26.11	360	100.0
Purchases on credit	Increased	1	0.28	3	0.83	3	0.83	7	1.94
	Remained the same	159	44.17	52	14.44	69	19.17	280	77.78
	Decreased	24	6.67	27	7.50	22	6.11	73	20.28
	Total	184	51.11	82	22.78	94	26.11	360	100.0

Source: edited by the authors using BEEPS data

As it is mentioned in the Table 16, the cash flows of the firms in MOLDOVA decrease due to the COVID-19 outbreak. Comparing between the firms in the three sectors, the manufacturing firms are the first affected with 45.56% off all the firms have a decreased cash flow, followed by firms in services sector with 21.67% of all the firms. However, for using credits in both sales and purchases operations, majority of the firms in the three sectors mention that the rate of the operation

remains the same before and during the period of COVID-19 pandemic. As it is presented in the Table 17, the majority of the firms of the sample in MOLDOVA had a decrease in the cash-flow especially manufacturing firms. The Table 18 shows that there is a decrease in cash-flow availability in these firms.

Table 17: Rate of decrease in cash flow availability due to COVID-19 pandemic

	Manufacturing		Retailing		Services		Total	
	N	%	N	%	N	%	N	%
0-20%	7	1.94%	5	1.39%	15	4.17%	27	7.50%
21-40%	22	6.11%	13	3.61%	14	3.89%	49	13.61%
41-60%	15	4.17%	11	3.06%	18	5.00%	44	12.22%
61-80%	14	3.89%	15	4.17%	8	2.22%	37	10.28%
81-100%	126	35.00%	38	10.56%	39	10.83%	203	56.39%
Total	184	51.11%	82	22.78%	94	26.11%	360	100.00%

Source: edited by the authors using BEEPS data

As it is presented above in Table 17, manufacturing firms are the most firms that have a decrease in cash-flow availability with a rate of 51.11% of all firms, followed by firms in services sector with 26.11% and at least retailing firms with 22.78%. following this data, manufacturing firms are always the most influence firms with COVID-19 outbreak. for the rate of the decrease, we find that for the three sectors of activities, the rate of more than 80% appeared as a rate of decrease in the cash-flow availability due to the COVID-19 pandemic. This represents also the hug effect of the pandemic on the financial side of the firms. To cover this decrease, different firms look for sources to deal with cash-flow shortages as it presented in Table 18.

Table 18: The main source used to deal with cash flow shortages

Source of loan	N	%
Loans from commercial banks	16	4.44
Loans from non-banking financial institutions (microfinance institutions, credit cooperatives, credit unions, or finance companies)	7	1.94
Equity finance (increase contributions or capital from existing owners/shareholders or issuing new shares)	66	18.33
Delaying payments to suppliers or workers	209	58.06
None of the above	62	17.22

Source: edited by the authors using BEEPS data

As it presented it Table 18 above, all the firms look for different source to deal with cash-flow shortage. We find that the big majority of the firms with 58.06% prefer to delay payments to suppliers as workers to deal with cash-flow shortages. This means that the COVID-19 have a direct effect on the firms and an indirect effect on its suppliers and workers. In the second step, 18.33% of the firms try the equity finance as a source of cash-flow. Among the financial problems and following the Table 18, the consequences of COVID-19 pandemic push the firms of MOLDOVA to delay payment for different parts as it is mentioned in the Table 19.

Table 19: Delayed payments due to the COVID-19 outbreak for more than one week (excluding payments postponed following current regulation) to:

		Manufacturing		Retailing		Services		Total	
		N	%	N	%	N	%	N	%
Its suppliers	Yes	130	36.11	50	13.89	45	12.50	225	62.50
	No	54	15.00	32	8.89	49	13.61	135	37.50

Its landlords	Yes	28	7.78	23	6.39	21	5.83	72	20.00
	No	156	43.33	59	16.39	73	20.28	288	80.00
The tax authorities	Yes	30	8.33	16	4.44	21	5.83	67	18.61
	No	154	42.78	66	18.33	73	20.28	293	81.39

Source: edited by the authors using BEEPS data

Following the data presented in the Table 19 above, the big parts of MOLDOVA firms with 62.50% of all the firms of the sample delay payment due to COVID-19 pandemic for more than week to its suppliers. These results are the suppliers are affected from two side at least, COVID-19 pandemic and the effect of COVID-19 pandemic for the customers. However, for the landlords and tax regulation, the majority of the firms (80% and 81.39% respectively) does not delay payment because these payments are for the state, so this latest propose facilities such as making them payment postponed for the firms. Therefore, the majority of the firms in the three sectors benefit from the post-paid facility and do not delay the payment.

4.4 Policies response due to COVID-19 pandemic

Different states in the world including MOLDOVA make many supports for the firms to face against the COVID-19 pandemic. The Table 20 presents the response of the firms for these supports.

Table 20: The rates of the firms that has received any national or local government support in response to the crisis

Category	N	%
Yes	5.000	1.39
No, but expect to receive it in the next 3 months	7.000	1.94
No	348.000	96.67

Source: edited by the authors using BEEPS data

According to the data presented in the Table 20 above, 96.67% of the firms of the sample in MOLDOVA does not receive any national or local government support in response to the COVID-19 pandemic. However, 1.39% of these firms that has received the support. The Table 21 presents the different types of the supports.

Table 21: Types of national or local government support expected by the firms

Types of the supports	Receive the support	N	%
Cash transfers for businesses	Yes	1	0.28
	No	359	99.72
Deferral of credit payments, rent or mortgage, suspension of interest payments, or rollover of debt	Yes	2	0.56
	No	358	99.44
Access to new credit	Yes	2	0.56
	No	358	99.44
Fiscal exemptions or reductions	Yes	2	0.56
	No	358	99.44
Tax deferrals	Yes	3	0.83
	No	357	99.17
Wage subsidies	Yes	2	0.56
	No	358	99.44

Source: edited by the authors using BEEPS data.

According to the Table 21, six types of the supports are proposed for the firms, however, there is strict minority of the firms that have receives this support. To

understand the causes of this minority, Table 22 summarises the repartition of some proposed causes for different firms in MOLDOVA;

Table 22: The causes of did not receive assistant from national, local government measures issued in response to the outbreak of COVID-19

	Manufact		Retailing		Services		Total	
	N	%	N	%	N	%	N	%
Pending decision on assistance	6	1.67	5	1.39	3	0.83	14	3.89
No need for assistance	15	4.17	16	4.44	14	3.89	45	12.50
Did not qualify to receive assistance	19	5.28	17	4.72	28	7.78	64	17.78
Did not know assistance opportunities existed	112	31.11	30	8.33	25	6.94	167	46.38
Measures are not relevant for the issues facing this business	14	3.89	3	0.83	9	2.50	26	7.22
Measures are too small in size to help the business	9	2.50	5	1.39	8	2.22	22	6.11
Other	9	2.50	6	1.67	7	1.94	22	6.11

Source: edited by the authors using BEEPS data.

As it is presented in the Table 22, 46.38% of the total sample did not know that the assistant of the national or local government is existed. So, the lack of the information is the first barrier for the firms to profit from this assistant. In the second rate, 17.78% of the firms of the sample did not qualify to receive assistance. This means that there were special characteristics for the firms to have the ability to receive the assistance. Where in the third place, 12.50% of the firms mention that there are need for these assistances. Comparing between sector of activities, for both manufacturing and retailing firms, the majority mention that there has the information of the existence of such kind of assistant. However, for service firms, majority of the firms mention that there did not qualify to receive that assistant. This information could clarify that the state makes special characteristics for services firms to have the ability to receive the assistance as the one presented in the table before. After the presentation of the effect of COVID-19 pandemic in the different activities of the firms of MOLDOVA (production, sales, finance, labour). It is necessary to understand the main solutions proposed by the managers of the firms to cope with the effect with the effect of COVID-19 pandemic

Table 23: The policy changes that will be of benefit this business the most to cope with the effects from the outbreak of COVID-19

Policy	Manufacturing		Retailing		Services		Total	
	N	%	N	%	N	%	N	%
Reduction of tax obligations	139	38.61	54	15.00	52	14.44	245	68.06
Reduction of parafiscal fees	6	1.67	5	1.39	13	3.61	24	6.67
Increased labour subsidies	13	3.61	2	0.56	7	1.94	22	6.11
Increased availability to credit	4	1.11	3	0.83	2	0.56	9	2.50
Increased credit subsidies	3	0.83	3	0.83	4	1.11	10	2.78
Removal of trade restrictions	10	2.78	12	3.33	9	2.50	31	8.61
Reduction in regulatory	6	1.67	1	0.28	5	1.39	12	3.33

requirements								
Removal of price controls	3	0.83	2	0.56	2	0.56	7	1.94

Source: edited by the authors using BEEPS data.

Table 23 presents responses of the owners/top manager of MOLDOVA firms to different policies to cope with the effect of COVID-19 pandemic. Majority of the firms of the sample (68.06%) mention that the reduction of tax obligation is the most beneficial policy to cope with the effects from the outbreak of COVID-19. In the second rate, 8.61% of the firms ask for removing trade restrictions to get the ability to trade in freedom. Comparing between the sector of activities, the first proposition that is reduction of tax regulations is common between the three sectors of activities. This means that the first important solution for MOLDOVA firms to cope with the COVID-19 pandemic is the reduction of tax obligation because it is directed by the authorities. Therefore, the authorities have the ability to reduce tax regulations for the firms. For the second policy of each sector, starting with firms in manufacturing sector, because the second proposed policy to cope with COVID-19 pandemic is increasing labour subsidies because the manufacturing firms base on an important number of employees in their operations. Therefore, the labour subsidies policy helps the manufacturing sector to cope with COVID-19 pandemic. For the services firms in MOLDOVA country, second preferred policy that will help the firms to cope with COVID-19 pandemic is the reduction of parafiscal fees (3.61% of all the total of the firms) following the activity of the firms. For retailing firms, second proposed policy to cope with COVID-19 pandemic in MODLOVA is removal of trade restriction (with 3.33% of all firms of the sample) due to its activity, because retailing firms are basing on the trade activities. Therefore, after the reduction of taxes obligation, removing of trade restriction will offer more freedom to cope with COVID-19 pandemic.

4.5 Expectations due to COVID-19 outbreak:

After presenting the effect of the COVID-19 pandemic on the firms of MOLDOVA, and selecting the appropriate policy for the firms to cope with COVID-19 pandemic, the latest part of the study is to estimate the expectation of the owner/top manager due to the COVID-19 pandemic.

Table 24: Expectation of the firm to fall in arrears in any of its outstanding liabilities in the next 6 months

Response	N	%
Yes	237.000	65.83
No	123.000	34.17

Source: edited by the authors using BEEPS data

Starting with the financial side of the firms, after presenting the effect of COVID-19 pandemic on the different sides of the firms such as financial side, production, sales, we find that COVID-19 pandemic have a strong effect on the financial side of the firms, these latest pushes 65.83% of the firms of the sample to expect to fall in arrears in any of its outstanding liabilities in the next 6 months, however just 34.17% of the firms that expect the contrary. This data and these expectations represent the huge negative effect of COVID-19 pandemic. For the expectation about the sales of the firms, Table 25 presents the expectation of the owner/top manager of the firm sale.

Table 25: Expected period of the firm sales to get back to normal

Categories	Frequency per category	Frequency per category (%)

Never	6	1.67
Current sales are as normal	20	5.56
Less than 3 months	82	22.78
Between 4 and 6 months	206	57.22
Between 7 and 12 months	40	11.11
Between 13 and 24 months	6	1.67
Total	360	100.00

Source: edited by the authors using BEEPS data.

Following the data presented in the Table 25 above, just 20 firms (that represent 5.56% of the sample) find that the sales of the firm remain the same even in the covid-19 outbreak. More than the half of the sample (57.22 % of the sample) expects that the establishment needs at least 6 months to get back to normal. This latest information shows that the establishment had a serious deficit that needs at least 6 months to back to normal. However, other firms that represent 1.67% find that their sales will be never back to normal. These rates explain the serious negative effect of the COVID-19 pandemic on the firms. The Table 26 demonstrates the repartition of the expectation per sector of activity.

Table 26: Expected of the firms' sales per sector to get back to normal

Sector	Never	Normal	Less than 3 months	4 to 6 months	7 to 12 months	13 to 24 months	Total
Manufactu	0	10	36	124	12	2	184
Retailing	4	5	16	40	14	3	82
Service	2	5	30	42	14	1	94
Total	6	20	82	206	40	6	360

Source: edited by the authors using BEEPS data

As it is mentioned in the Table 26, the firms in the three sectors were affected by the covid-19 outbreak. Following their expectations, the majority of establishments need at least 6 months to get back to normal sales. However, 82 firms expected to get back sales in less than 3 months. Also, manufacturing firms always mention that even if they need time, but their sales could back to normal, therefore, there are any firms who mention that their sales could not get back to normal. Also, comparing between the firms who needs more than 6 months for their sales to get back to normal, manufacturing firms are also less comparing with the other sector. These means that manufacturing firms get the ability to back to normal in short time more than the firms in the other sectors. For the firms work force, Table 27 presents the expected time of the firms work force to get back to normal.

Table 27: Expected period for the size of the firms work force to get back to normal

	Manufacturing	Retailing	Services	Total	Rate (%)
Never	1	3	0	4	1.11
Current workforce as normal	145	62	63	270	75.00
Less than 3 months	25	9	19	53	14.72
From 4 to 6 months	9	5	8	22	6.11
From 7 to 9 months	3	0	0	3	0.83
From 10 to 12 months	1	3	4	8	2.22

Source: edited by the authors using BEEPS data

As it is mentioned in the Table 27, 270 firms that represent 75% of the sample of the study continue working as normal. These results confirmed also with the data of the Table 12 (labour force of the majority of the firms remain the same before

and during the COVID-19 pandemic). However, 14.72% of the firm expected to get back to their size in a period less than 3months. Also, data in the Table 27 shows that work force of manufacturing firms resist more to the COVID-19 pandemic and could get back to normal li less period rather than the work force of the firms in the sectors, therefore, for the period between 10 to 12 months, one manufacturing firms against many firms in the other sectors.

Conclusion and recommendations:

The essential objective of the article is to investigate the main effects of COVID-19 pandemic on the performance of MOLDOVA firms. COVID-19 pandemic is a health crisis that affects the world from the last months of 2019. This crisis has different sides of effects such as the health of humans, the performance of the firms and the economic growth of the states. Following the literature review, we find that it causes different problems. Following the empirical parts of the paper, we find that it pushes the firms at first to close. More than 70% of the firms of the sample has been closed due to the pandemic until 9 weeks. The closure creates different effect on the firms. Starting from the change of activity, some firms were obliged to adjust or convert fully or partially its production to survive against the pandemic. From the effects of COVID-19 pandemic on the performance of the firms in MOLDOVA, the demand for the firm's product and services was affected by the pandemic, 85% of the firms of the sample in MOLDOVA have a decrease in the rate of demand for firms' products and services. Also, the sales of MOLDOVA firms are affected by the COVID-19 pandemic, the sales of the majority of the firms of the sample in MOLDOVA needs at least between 4 to 6 months to back to normal. Comparing between the three sectors of activities, manufacturing firms are the most resistant firms to the pandemic, followed by firms in services sector. Where, some retailing firm declare that they will never get back to normal. Also, COVID-19 pandemic has a negative effect on the majority of firms of the sample in MOLDOVA, where more than 90% of the firms has a decrease in the sales of the firms. From the new ways to survive is the online sales, however, just 20% of the firms use the online sales. For the Effect of COVID-19 pandemic on work force, the pandemic has a negative effect on the sample of MOLDOVA firms where 81.94% of the firms has a decrease in the total hours worked per week, where there were some retailing firms confirm that their work force will be never back to normal. To face the COVID-19 pandemic effects on the firm, and following the social-distancing obligation for the humans, and decrease in the rates of sales and rates of production, there are different firms in MOLDOVA launch different policies in the way of applying the obligation of social distancing and to don't fall in other problems. From these policies, there are: took the workers leaves, more than 12% of the firms' fire from 1 to more than 50 workers, second is making the employees "have been laid-off" to cope against the pandemic where just 3% of the firms on the sample apply this policy. However, third one is making the employees been furloughed. These policies help the firms to reduce the costs of the employees and to apply the social distancing for the employees. In addition to the effect of the pandemic on the both sales and production sides, it affects also financial side of the firm. More than 50% of the firms of the sample has a decrease in the sales until 100%. This mentions the strong negative effect of COVID-19 outbreak on financial parts of MOLDOVA firms. The negative effect of COVID-19 pandemic pushes the firms to fall in arrears in any of the outstanding liabilities.

Following these effects, a rate of 65.83 % of the sample in MOLDOVA expect that there will fall in arrears of its outstanding liabilities in the next 6 months. These rates mentions that COVID-19 pandemic have a negative effect in the medium and long run. Also, from the consequences of the COVID-19 pandemic is delaying payment on different parts especially for their suppliers. Therefore, different owners/top managers of the firms look for new policies to cope with COVID-19 pandemic. Many firms in MOLDOVA launch different new procedures in the way of survive. From these procedures, starting and increasing business activity online where there are more than 20% of the firms of the sample start and increase business activity online in the way of surviving in the period of COVID-19 pandemic. Also, different firms in MOLDOVA launch some new types of works in way of surviving. From these policies is making the workforce working remotely, this type of work is applied in more than 25% of the firms of the sample in the three sectors. In addition to the previous two procedures, more than 18% of the firms start or increase delivery or carry-out of goods and services to make the operation easy for the customers to get the product. MOLDOVA government offered some types of assistant support for the firms to help them to face COVID-19 pandemic such as cash transfer for business, access to new credit, wage subsidies. However, just few firms have received the support due to different causes. The first cause is the lack of information where the majority of the firms did not know about these assistants, and the second rate is qualification to receive assistance. As recommendation from the study, different policies are proposed by the owner/top manages of the firms that will be of benefit this business the most to cope with the effect from the outbreak of COVID-19 are at first tax reduction because it is from the policies that enhance performance of the firms[12], therefore, majority of the firms in the three sectors propose at first , the reduction of tax obligations because the tax reduction offers possibilities to the firms to resists against the crises such as COVID-19 pandemic. Also, parafiscal fees represent one of the taxes demanded from the firms especially in the services sector[3]. Therefore, these fees represent from the borders that hamper the activities of the firms in service sector[45]. Therefore, there are some firms in service sector find that the reduction of parafiscal fees will foster the firms in service sector to cope with the effects of COVID-19 pandemic. In addition, trade restrictions restrict firms

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especially in retailing sector[1] because it hamper the trade activities of the firms. Therefore, second proposition of retailing firms to cope with COVID-19 pandemic is to remove of trade restrictions. As it is presented in the data analysis, work force is affected with the COVID-19 pandemic. employment subsidies increase employment in the firms[2]. So, to cover the problems of employment especially for manufacturing firms, second proposition of manufacturing firms is increasing labour subsidies. In addition to the selected propositions, there were also other proposed recommendations that will help the firms to cope with COVID-19 pandemic such as Increasing availability to credit, increasing credit subsidies, reducing regulatory requirements and removing price controls. The COVID-19 pandemic presents an opportunity and a need for many companies to build and invest in different competencies such as: being more digital and using online sales, launching data-driven in the different activities in the establishments, creating stronger capabilities in e-commerce and security, enhance the possibility of working remotely, investing in the digitalization.

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