International Labour Organization

Impacts of COVID-19 Restrictions on the Formal Private Sector in the Occupied Palestinian Territory

A Rapid Assessment

Tareq Abuelhaj, ILO International Expert

ILO Regional Office for Arab States

Background

Restrictions instituted to slow the spread of the COVID-19 are projected to have severe economic consequences forcing businesses to cease or reduce operations. The ability of businesses to cope in the face of COVID-19 restrictions depends largely on their liquidity and ability to maintain positive cash flows during the crisis.

The Ministry of Labour (MoL) emergency response plan presents a matrix outlining potential response options to support workers across three main categories of businesses, categorized in relation to the expected impact of the COVID-19 crisis.

This note utilizes available data to assess the impact of the COVID-19 crisis on the Palestinian formal private sector and classifies businesses according to the categories defined in the MoL Response Plan, which are:

- **Category 1**: Businesses with sufficient liquidity despite the crisis;
- **Category 2**: Businesses facing liquidity constraints affecting operations and payroll due to the crisis;
- **Category 3**: Businesses expected to cease activities and dismiss all workers.

The number of workers employed within the various categories is assessed to provide an estimated impact of the COVID-19 restrictions on workers and to support the design of the response options defined in the MoL emergency response plan as outlined in Table 1 below.

Expected economic impacts of COVID-19

The Palestinian Central Bureau of Statistics (PCBS) has projected the impact of the COVID-19 restrictions within different scenarios defined by the length of the COVID-19 restrictions. This note utilizes the projections defined by scenario in which COVID-19 restrictions remained for a period of three months.

In this scenario, PCBS estimates 2020 GDP to fall by 13.5% compared to 2019 GDP as a result of the COVID-19 restrictions (Table 2). This is also 15.5% lower than the 2020 baseline GDP projection. Approximately half of the (year- on-year) losses are expected in the Services sector (51.4%). Within this sector, PCBS projections estimate a 47% reduction in “Hotels and Restaurants” value added, followed by 19.6% reduction in “Wholesale and Retail Trade”.

Table 1: Options of support to workers across business categories

<table>
<tr><th colspan="3" rowspan="2"></th><th colspan="4">Employment status</th></tr>
<tr><th>Declared formal sector employees</th><th>Undeclared formal sector workers</th><th>Own-account workers (formal and informal)</th><th>Other categories of informal workers</th></tr>
<tr><td rowspan="3">Levels of impact on business viability</td><td>Category 1</td><td>Businesses with sufficient liquidity; operations not severely affected</td><td></td><td>Fast-tracked review of employment status and eligibility for employer-paid sick leaves</td><td colspan="2">Government-paid sick leave benefits upon COVID diagnosis or mandatory medical quarantine</td></tr>
<tr><td>Category 2</td><td>Businesses with insufficient liquidity; operations and payroll affected</td><td colspan="2">Extend validity of tripartite agreement on delaying 50% of wages
Delay or waive tax, utility payments for affected businesses, conditioned upon payroll retention
Public loans to affected businesses, conditioned upon payroll retention, and/or emergency wage subsidy programme (e.g. for SMEs)</td><td colspan="2" rowspan="2">Emergency income support for affected, vulnerable workers
Emergency individual loan scheme
Scaled-up cash benefits through Cash Transfer Programme (CTP) (Ministry of Social Development, MoSD)</td></tr>
<tr><td>Category 3</td><td>Business activity ceased, workers dismissed</td><td>Guarantee fund for fast payment of severance benefits (state guarantee and credit recovered in bankruptcy process)</td><td>Fast-tracked review of former employment status, guarantee fund for fast payment of severance benefits (state guarantee and credit recovered in bankruptcy process)</td></tr>
</table>

Source: Ministry of Labour Plan to Mitigate the Effects of COVID-19 Pandemic on Workers and ILO Regional Office for Arab States

Implications of the economic crisis on the local labour market

This note utilizes the latest Economic Survey Series data made available by PCBS to classify the local private sector according to these categories. This survey includes data on the local formal private sector excluding those engaged in agriculture and financial

and insurance activities. The analytical approach[1] assumes that the COVID-19 restriction translates to a cash flow crisis at the enterprise level. Therefore, enterprises simulated to maintain a positive cash flow after the negative revenue shock resulting from COVID-19 restrictions are classified as Category 1 businesses. Enterprises facing negative cash flows following the crisis are classified as Category 2 businesses. Meanwhile, those estimated to have had negative cash flows prior to the crisis are assumed to be the most likely to cease activities and are classified as Category 3 businesses. The distribution of these categories is presented in Table 3.

Table 2: Projected GDP in 2020 under 3 months of COVID019 restrictions (in USD millions)

	2019	2020 (COVID-19)	% increase (% decrease)
GDP	$ 15,764	$ 13,638	(13.5%)
Agriculture, forestry and fishing	$ 1,092	$ 931	(14.7%)
Mining and manufacturing	$ 1,823	$ 1,487	(18.4%)
Construction	$ 898	$ 713	(20.6%)
Services and other branches, of which:	$ 9,617	$ 8,525	(11.4%)
• *Wholesale and retail trade*	*$ 3,372*	*$ 2,712*	*(19.6%)*
• *Other services*	*$ 6,012*	*$ 5,690*	*(5.4%)*
• *Hotels and restaurants*	*$ 233*	*$ 123*	*(47.2%)*

Source: (PCBS, 2020)

Table 3: Distribution of enterprises by impact category and size of enterprise

	All	Small	Medium	Large
Category 1	65%	68%	47%	47%
Category 2	22%	22%	20%	23%
Category 3	13%	10%	33%	30%

[1] The annex details the methods applied in this note.

The analysis shows that 13% of Palestinian private enterprises had negative cash flows prior to the COVID-19 restrictions (Table 3). These are assumed to experience even more severe cash flow difficulties as a result of COVID-19 restrictions and are assumed to fully cease activities and their workers fully laid off.

More medium and large businesses were experiencing negative cash flow previous to the COVID-19 restrictions (33% and 30% respectively). In contrast, only 10% of small businesses with less than 5 employees were experiencing negative cash flow previous to the COVID-19 restrictions. Medium and large businesses employ 74% of the formally employed workers.

Table 4: Distribution of Category 3 businesses by sector and size

	All	Small	Medium	Large
Industry	15%	12%	23%	28%
Construction	16%	10%	17%	21%
Internal trade	14%	11%	44%	15%
Services	11%	8%	30%	39%
Storage and transporting	21%	13%	29%	36%
Information and telecommunications	15%	12%	19%	22%
Total	13%	10%	33%	30%

Table 5: Number of formal waged employees in Category 3 businesses by sector and size

	All	Small	Medium	Large
Industry	18,389	3,544	8,037	6,808
Construction	2,109	39	444	1,626
Internal trade	27,192	8,703	17,087	1,402
Services	31,595	4,766	9,841	16,988
Storage and transporting	1,955	164	1,189	602
Information and telecommunications	876	124	240	311
Total	82,116	17,340	36,838	27,937

Approximately 82,000 workers are estimated to lose their work due to pre-COVID-19 vulnerabilities (Table 5), the majority of which from the services sector followed by trade and industry.[2] And more workers employed in medium-sized businesses are expected to be laid off than from large or small businesses. According to the 2019 LFS data, approximately 57% of private sector workers are employed in formal businesses (approximately 445,000 workers). However, not all of those employed within the formal private sector enjoy formal employment conditions. Half of the workers employed in formal businesses in the West Bank and Gaza Strip are informally employed, reaching an estimated 182,000 workers.

Table 6: Distribution of Category 2 businesses by sector and size

	All	Small	Medium	Large
Industry	17%	14%	24%	33%
Construction	21%	10%	20%	39%
Internal Trade	29%	30%	22%	47%
Services	10%	9%	14%	7%
Storage and Transporting	2%	3%	2%	2%
Information and Telecommunications	3%	0%	9%	0%
Total	22%	22%	20%	23%

Table 1: Number of waged employees in Category 2 Businesses

	All	Small	Medium	Large
Industry	20,139	2,871	7,521	9,746
Construction	2,968	34	530	2,403
Internal Trade	26,394	11,176	9,855	5,363
Services	12,567	3,980	4,900	3,687
Storage and Transporting	89	22	41	25

[2] These results are supported by additional forthcoming ILO analysis (al-Botmeh S. and Sadeq T., 2020) showing similar rates of job loss, and include job losses in agriculture. In both analyses, the mining and manufacturing (industry) and services sectors are both among the top three worst-affected sectors in terms of employment in the local Palestinian labour market.

Information and Telecommunications	172	-	172	-
Total	62,328	18,085	23,019	21,224

Category 2 businesses employ a total of 62,000 employees. These workers are considered at risk of facing reduced wages or loss of employment. The majority of these workers are employed in the trade sector, followed by industry and services.

Among both small and medium businesses, more workers employed in trade are at risk than in the remaining sectors. Among large businesses, more workers employed in the industry sector are at risk relative to the remaining sectors.

Furthermore, information from the ESS data and the 2019 Labour Force Survey are utilized in order to assess the characteristics and employment status of the workers within each of the three categories. These are illustrated in Figures 1 to 6.

The profile of workers most likely to lose their employment in the formal private sector (employed in Category 3 businesses) is a near perfect reflection of the broader labour force: 86% male, 60% under 35 years old, 19% self-employed and 52% informally employed. In contrast, the profile of workers at somewhat lesser risk of facing reduced wages or loss of employment in the formal private sector (employed in Category 2 businesses) are slightly younger (62% under 35 years old) and more male (96% male). They are also less skilled (86% low and medium skilled) and more likely to work in elementary occupations (16%), mainly under informal work conditions (63%).

Figure 1: Sex of workers by business category

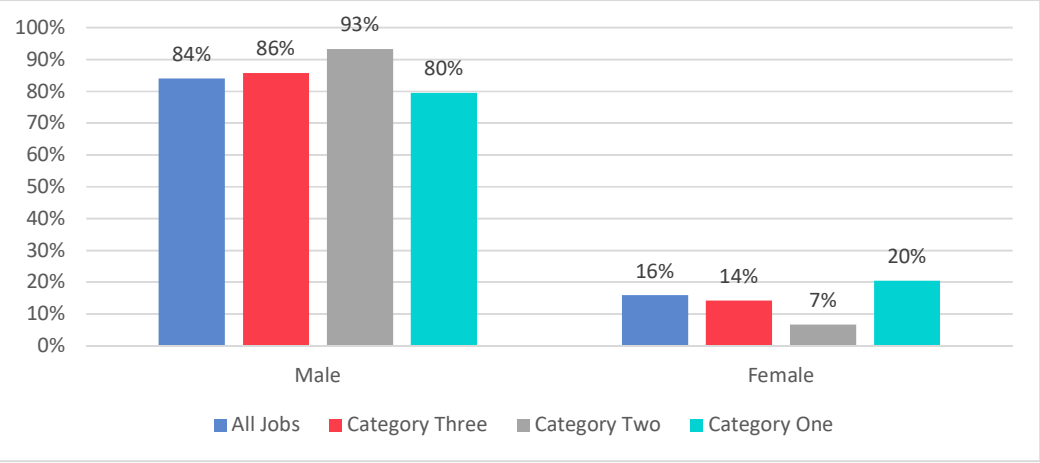


Figure 2: Age of workers by business category[3]

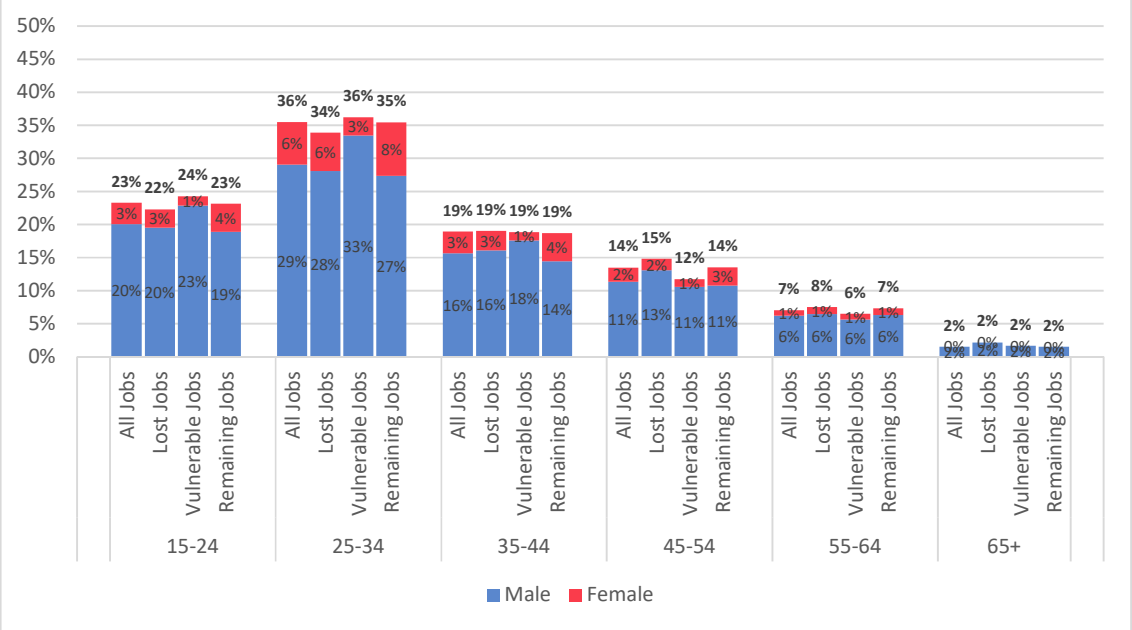
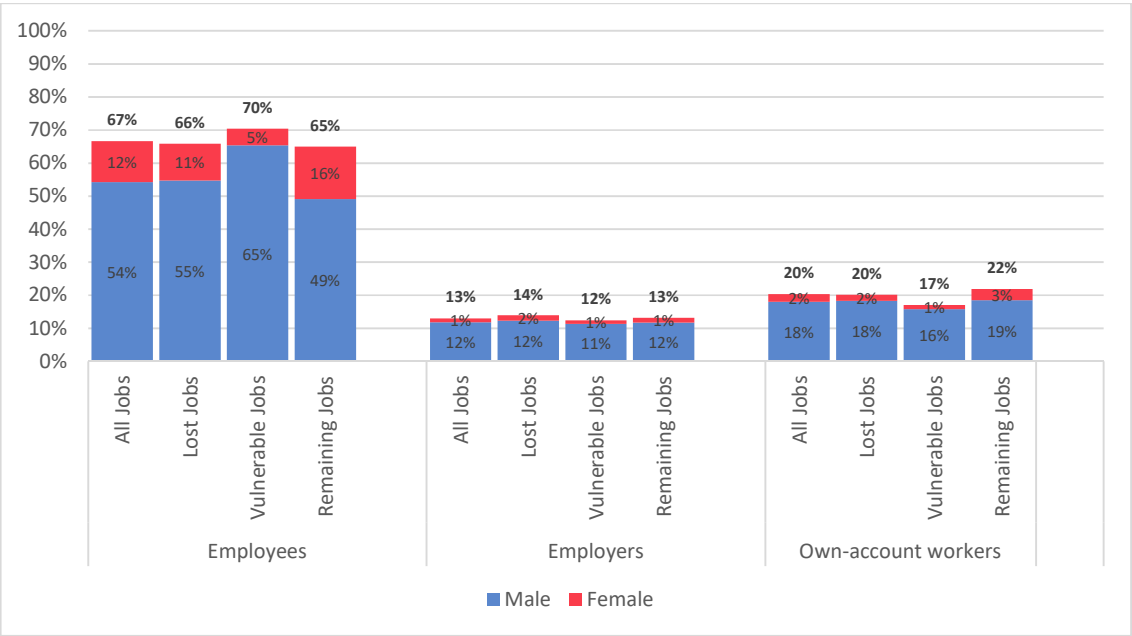


Figure 3: Employment status of workers by business category



[3] Business categories correspond in Tables 2 through 6 to "Remaining Jobs" (Category 1), "Vulnerable Jobs" (Category 2) and "Lost Jobs" (Category 3).

Figure 4: Occupation of workers by business category

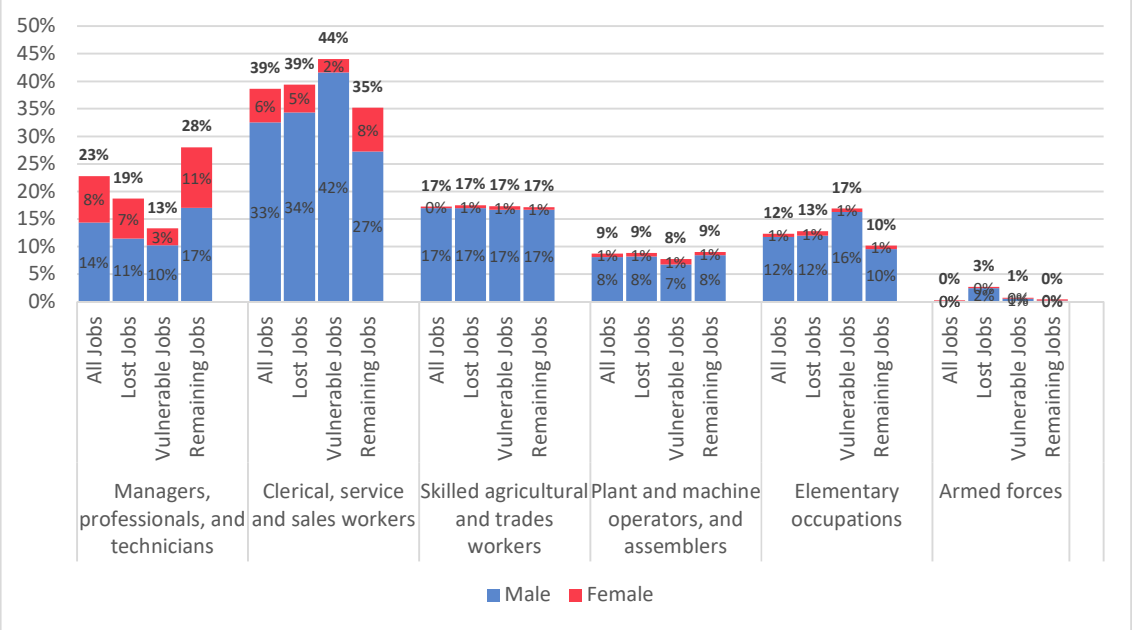


Figure 5: Skill level of workers by business category

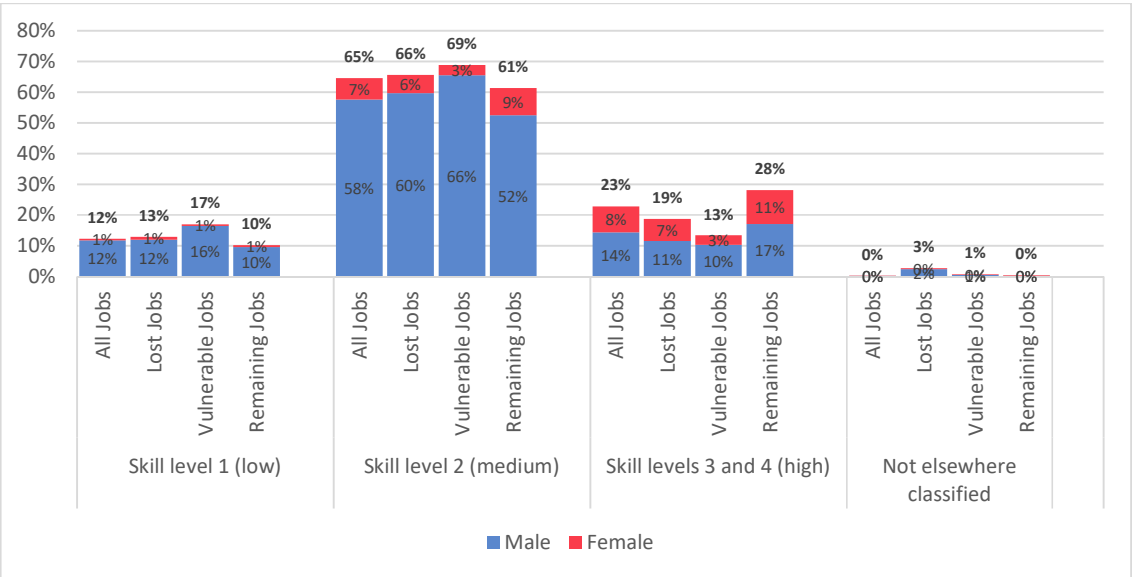
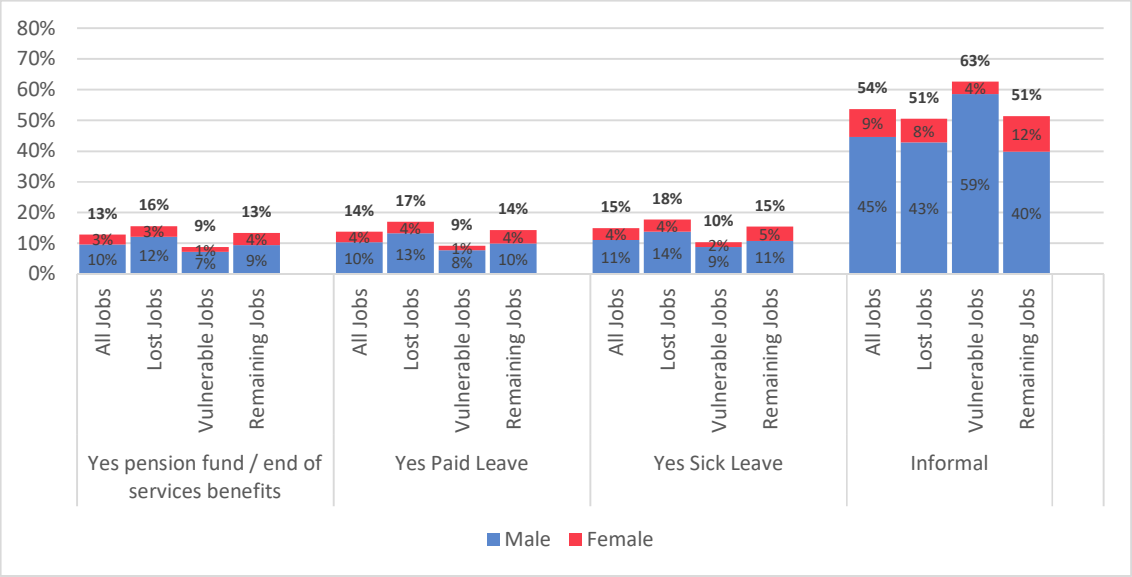


Figure 6: Level of informality and access to benefits of workers by business category



The analysis provides an estimate of the distribution of workers by employment status across the three categories. This includes employees with formal jobs, employees with informal jobs[4] and own account workers. These are reflected in Table 8. In addition, Table 8 includes the estimated number of all informal sector workers (i.e. informal unit of production), although this is not broken down by category of business.[5]

Matching the numbers of workers in Table 8 to the proposed interventions in Table 1 provides an estimate of the potential number of beneficiaries per intervention. This is detailed in Table 9.

[4] The definition here refers to whether a job – not the unit of production – is formal or informal. If the person is an employee, this is defined based on the attachment to a national labour legislation or the entitlement to certain employment benefits (paid vacation, paid sick leave and contribution to pension funds). If the person is self-employed, it depends on the unit of production. All contributing (unpaid) family workers are classified as holding informal jobs.

[5] Applying the results established for the formal sector to impute the proportion of informal sector workers in each category results in approximately 55,000 informal sector workers in Category 2 and 58,000 in Category 3. However, categorizing informal sector businesses according to results established for the formal sector relies upon unsound and indefensible assumptions and is therefore not endorsed in this analysis.

Table 8: Distribution of workers by employment status across all three categories

			Employment status			
			Declared formal sector employees	Undeclared formal sector employees	Own-account workers (formal and informal)	Other categories of informal sector workers
Levels of impact on business viability	Category 1	Business with sufficient liquidity; operations not severely affected	74,150 employees	21,686 employees	58,597 workers	242,256 workers (all categories)
	Category 2	Businesses with insufficient liquidity; operations and payroll affected	39,312 employees	5,123 employees	17,893 workers	
	Category 3	Business activity ceased; workers dismissed	43,034 employees	13,131 employees	25,950 workers	

Table 9: Estimated formal sector workers need by type of intervention

Intervention	**Workers**
Fast-tracked review of employment status and eligibility for employer-paid sick leave	21,686
Government-paid sick leave benefits upon COVID-diagnosis or mandatory medical quarantine	187,854
Extend validity of tripartite agreement on delaying 50% of wages	44,435
Delay or waive tax, utility payments for affected businesses, conditioned upon payroll retention	44,435
Public loans to affected businesses, conditioned upon payroll retention OR/AND Emergency wage subsidy programme (e.g. for SMEs)	44,435
Guarantee fund for fast payment of severance benefits (state guarantee and credit recovered in bankruptcy process)	43,034
Fast-tracked review of former employment status, guarantee fund for fast payment of severance benefits (state guarantee and credit recovered in bankruptcy process)	13,131
Emergency income support for affected, vulnerable workers; Emergency individual loan scheme; Scaled-up cash benefits through Cash Transfer Programme (CTP	43,843

Table 10: Aggregate annual expenditures for Category 2 businesses

Size	Activity	Free Cash Flow	Operating Cash Flow	Interest Exp.	Capital Exp.	Wage Bill	Social Security	Total Compensation	Utilities	Taxes & Fines
Small	Industry	$ 8,009,291	$ 8,260,134	$ -	$ 250,842	.	$ 291,665	$ 16,162,697	$ 8,095,319	$ 557,338
	Construction	$ 172,336	$ 174,022	$ -	$ 1,685	$ 325,915	$ 14,043	$ 339,958	$ 30,041	$ 20,869
	Internal Trade	$ 118,995,819	$ 122,449,816	$ 8,053	$ 3,462,051	$ 52,393,359	$ 662,313	$ 53,055,672	$ 18,860,523	$ 8,264,770
	Services	$ 34,909,738	$ 34,993,502	$ -	$ 83,764	$ 16,328,139	$ 120,150	$ 16,448,289	$ 5,879,008	$ 414,338
	Storage and Transporting	$ 3,065	$ 2,135	$ 930	$ -	$ 90,525	$ -	$ 90,525	$ 3,917	$ 446
	Information & Telecomm.	$ 35	$ 35	$ -	$ -	$ -	$ -	$ -	$ 278	$ -
	Total	**$ 162,090,284**	**$ 165,879,644**	**$ 8,983**	**$ 3,798,342**	**$ 85,008,970**	**$ 1,088,171**	**$ 86,097,141**	**$ 32,869,086**	**$ 9,257,761**
Medium	Industry	$ 23,923,606	$ 26,056,843	$ 67,926	$ 2,201,163	$ 56,299,773	$ 699,457	$ 56,999,230	$ 8,963,186	$ 1,487,662
	Construction	$ 3,269,713	$ 3,356,487	$ -	$ 86,774	$ 6,198,237	$ 143,271	$ 6,341,508	$ 217,433	$ 113,882
	Internal Trade	$ 127,538,070	$ 132,219,888	$ 713,022	$ 5,394,839	$ 68,043,620	$ 766,910	$ 68,810,530	$ 6,450,615	$ 6,870,788
	Services	$ 14,495,660	$ 15,907,770	$ -	$ 1,412,109	$ 26,855,950	$ 331,886	$ 27,187,836	$ 5,356,560	$ 1,882,104
	Storage and Transporting	$ 106,210	$ 132,689	$ -	$ 26,480	$ 351,654	$ -	$ 351,654	$ 4,273	$ 12,666
	Information & Telecomm.	$ 153,670	$ 154,774	$ -	$ 1,104	$ 2,766,339	$ 43,620	$ 2,809,959	$ 91,824	$ 178,559
	Total	**$ 169,486,929**	**$ 177,828,451**	**$ 780,948**	**$ 9,122,469**	**$ 160,515,573**	**$ 1,985,144**	**$ 162,500,717**	**$ 21,083,891**	**$ 10,545,661**
Large	Industry	$ 59,642,188	$ 66,902,127	$ 83,662	$ 7,343,601	$ 81,196,832	$ 2,207,186	$ 83,404,018	$ 14,079,771	$ 1,681,260
	Construction	$ 7,125,520	$ 6,995,110	$ 193,083	$ 62,672	$ 15,887,360	$ 209,181	$ 16,096,541	$ 326,120	$ 731,504
	Internal Trade	$ 101,507,170	$ 105,101,281	$ 88,180	$ 3,682,290	$ 40,843,941	$ 821,828	$ 41,665,769	$ 2,927,989	$ 3,242,998
	Services	$ 15,109,363	$ 15,640,917	$ 52,870	$ 584,424	$ 27,155,797	$ 914,206	$ 28,070,003	$ 3,756,442	$ 324,529
	Storage and Transporting	$ 70,136	$ 70,136	$ -	$ -	$ 126,155	$ -	$ 126,155	$ 505	$ -
	Information & Telecomm.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Total	**$ 183,454,377**	**$ 194,709,571**	**$ 417,795**	**$ 11,672,987**	**$ 165,210,085**	**$ 4,152,401**	**$ 169,362,486**	**$ 21,090,827**	**$ 5,980,291**

Table 11: Aggregate annual expenditures for Category 3 businesses

Size	Activity	Free Cash Flow	Operating Cash Flow	Interest Exp.	Capital Exp.	Wage Bill	Social Security	Total Compensation	Utilities	Taxes & Fines
Small	Industry	$ (16,631,921)	$ (14,671,145)	$ 4	$ 1,960,779	$ 21,958,977	$ 177,843	$ 22,136,820	$ 4,094,268	$ 437,817
	Construction	$ (253,207)	$ (250,053)	$ -	$ 3,154	$ 228,262	$ 5,897	$ 234,159	$ 17,317	$ 12,722
	Internal Trade	$ (59,541,204)	$ (57,760,776)	$ 50,710	$ 1,831,139	$ 49,138,098	$ 171,327	$ 49,309,425	$ 10,209,220	$ 1,633,483
	Services	$ (18,142,219)	$ (10,897,610)	$ 7,263	$ 7,251,872	$ 25,208,894	$ 124,296	$ 25,333,190	$ 2,850,041	$ 544,187
	Storage and Transporting	$ (613,940)	$ (515,314)	$ -	$ 98,627	$ 1,037,879	$ 336	$ 1,038,215	$ 135,690	$ 41,039
	Information & Telecomm.	$ (485,031)	$ (349,749)	$ 1,997	$ 137,278	$ 767,640	$ 5,991	$ 773,631	$ 112,317	$ 63,588
	Total	**$ (95,667,522)**	**$ (84,444,647)**	**$ 59,974**	**$ 11,282,849**	**$ 98,339,750**	**$ 485,690**	**$ 98,825,440**	**$ 17,418,853**	**$ 2,732,836**
Medium	Industry	$ (47,200,955)	$ (43,033,152)	$ 1,365	$ 4,169,168	$ 63,710,210	$ 1,381,254	$ 65,091,464	$ 8,246,656	$ 2,170,032
	Construction	$ (3,407,613)	$ (2,956,672)	$ 32,312	$ 483,254	$ 3,628,640	$ 411,672	$ 4,040,312	$ 51,628	$ 251,636
	Internal Trade	$ (84,588,702)	$ (82,287,252)	$ 207,254	$ 2,508,704	$ 82,681,468	$ 346,418	$ 83,027,886	$ 13,463,837	$ 1,139,579
	Services	$ (42,615,000)	$ (41,032,606)	$ -	$ 1,582,394	$ 49,362,968	$ 1,270,873	$ 50,633,841	$ 3,880,972	$ 859,295
	Storage and Transporting	$ (6,419,039)	$ (5,440,261)	$ 91,470	$ 1,070,249	$ 8,114,834	$ 61,710	$ 8,176,544	$ 174,361	$ 212,087
	Information & Telecomm.	$ (957,386)	$ (431,824)	$ -	$ 525,562	$ 1,860,089	$ 12,762	$ 1,872,851	$ 77,960	$ 60,243
	Total	**$ (185,188,695)**	**$ (175,181,767)**	**$ 332,401**	**$ 10,339,331**	**$ 209,358,209**	**$ 3,484,689**	**$ 212,842,898**	**$ 25,895,414**	**$ 4,692,872**
Large	Industry	$ (53,546,368)	$ (36,832,789)	$ 298,853	$ 17,012,432	$ 60,587,670	$ 1,878,517	$ 62,466,187	$ 13,603,445	$ 2,759,546
	Construction	$ (16,584,437)	$ (5,181,413)	$ 43,264	$ 11,446,288	$ 22,997,154	$ 3,752,025	$ 26,749,179	$ 210,234	$ 2,304,083
	Internal Trade	$ (9,589,212)	$ (9,084,127)	$ 462,647	$ 967,733	$ 11,172,007	$ 293,284	$ 11,465,291	$ 844,508	$ 1,318,072
	Services	$ (106,084,837)	$ (92,861,651)	$ -	$ 13,223,186	$ 158,270,854	$ 13,553,625	$ 171,824,479	$ 6,537,769	$ 1,329,281
	Storage and Transporting	$ (2,383,022)	$ (2,138,418)	$ 9,812	$ 254,417	$ 3,567,369	$ 27,860	$ 3,595,229	$ 72,294	$ 92,633
	Information & Telecomm.	$ (2,512,151)	$ (2,479,381)	$ -	$ 32,771	$ 5,149,065	$ 352,297	$ 5,501,362	$ 94,150	$ 68,767
	Total	**$ (190,700,027)**	**$ (148,577,779)**	**$ 814,576**	**$ 42,936,827**	**$ 261,744,119**	**$ 19,857,608**	**$ 281,601,727**	**$ 21,362,400**	**$ 7,872,382**

Opportunities to mitigate the impact of the crisis

The Palestinian economy has deteriorated over the past several years thereby eroding the ability of the private sector to absorb and mitigate the impact of the COVID-19 restrictions. The Palestinian private sector is dominated by small, family-owned enterprises, and has traditionally played an important cushioning role during times of crises.

Family-owned enterprises tend to prioritize employment continuity over capital accumulation and future growth. For example, the 2014 military operations in Gaza pushed the Palestinian economy into recession with real GDP of the Gaza Strip falling by 15%. Nonetheless, total employment in formal private sector enterprises in the Gaza Strip increased by 4.1% compared to 2013 employment. While waged employment fell by a modest 3.6%, the value of gross additions in fixed assets plummeted by 71.4% during the same period.

Consequently, private sector capital expenditures represented a meagre 1.5% of value added in 2018, down by more than half of 2013 levels (3.5%). This leaves little scope for Palestinian private sector to absorb the crisis without significant reduction in wages and job loss.

Among the response proposals considered in the MoL response plan is loan forgiveness. However, high interest rates and stringent collateral requirements have traditionally limited access to loans, particularly for small businesses.

In addition, the Ministry of Labour and representatives of the private sector and labour unions initially agreed to defer payment of 50% of wages for March and April for workers in the local private sector market.

Simulation analysis using aggregate data on business expenditures across the three categories shows that proposals such as annual tax and utility forgiveness have the potential to ameliorate liquidity difficulties for Category 2 businesses – reducing this category from 22% down to 14% and reducing the number of workers at risk of facing reduced wages or loss of employment (Table 12).

Table 12: Simulated impact of select response options

	No response	Reduce capital expenditure by 50%	Annual tax and public utilities forgiveness	Reduce March/April wage bill by 50%
Percent of businesses				
Category 1	65%	65%	73%	66%
Category 2	22%	22%	14%	21%
Category 3	13%	13%	13%	13%
Number of workers				
Category 1	159,434	160,317	172,589	168,769
Category 2	62,328	61,806	50,911	53,275
Category 3	82,116	81,756	80,378	81,834

One interesting result emerging in Table 12 is the fact that annual tax and utility forgiveness shows the potential to secure approximately 11,000 jobs from Category 2 as a result of an 8-percentage point reduction (down to 14%) in the proportion of businesses falling under Category 2. In contrast, the 50% reduction in the March and April wage bill shows the potential to secure approximately 9,000 jobs from Category 2 as a result of only 1-percentage point reduction in the proportion of businesses falling under Category 2. The difference in impact on businesses and jobs is explained by the fact that the former simulation benefits mainly small businesses engaged in trade activities while the latter simulation also benefits medium and large businesses engaged in services and industrial activities.

Specifically, the tax and utility forgiveness simulation shows approximately 10,600 businesses moving from Category 2 to Category 1 – 94% of which are small businesses and 72% of which are engaged in trade. The 50% reduction in the March and April wage bill simulation shows approximately 1,200 businesses moving from Category 2 to Category 1 – 41% of which are medium and large businesses and 81% of which are in the services and industry sectors.

The tax and utility forgiveness policy for Category 2 businesses is estimated to cost approximately US$59 million in foregone public revenues whereas the 50% reduction in the March and April wage bill is estimated at US$29 million in delayed expenditures.

These results indicate that a wage subsidy scheme would be more cost effective in preserving jobs than a tax and public utility relief scheme. However, the results also indicate that a tax and public utility relief scheme would disproportionately support small businesses and therefore support a larger number of businesses. Indeed, the MoL emergency plan does consider an emergency wage subsidy programme. Table 13 presents the results of a simulation of wage subsidies ranging from 10% up to 50% of the wage bill of Category 2 and 3 businesses. Table 14 provides cost estimates across a range of options, categories and business size, in 2018 terms.

Table 13: Simulated impact of wage subsidy scheme

	Wage bill reduced by:				
	10%	**20%**	**30%**	**40%**	**50%**
Percent of businesses					
Category 1	66%	68%	69%	70%	73%
Category 2	21%	19%	18%	17%	17%
Category 3	13%	13%	13%	12%	10%
Number of workers					
Category 1	169,761	178,528	189,221	197,712	208,556
Category 2	52,644	46,218	39,046	34,850	30,159
Category 3	81,473	79,132	75,611	71,316	65,163

Table 14: Estimated cost of wage subsidy scheme by category and business size

Business category	**Subsidy**	**Business size**			**Total**
		Small	Medium	Large	
Category 2	10%	$ 8,500,897	$ 16,051,557	$ 16,521,009	$ 41,073,463
	20%	$17,001,794	$ 32,103,115	$ 33,042,017	$ 82,146,926
	30%	$25,502,691	$ 48,154,672	$ 49,563,026	$123,220,388
	40%	$34,003,588	$ 64,206,229	$ 66,084,034	$164,293,851
	50%	$42,504,485	$ 80,257,787	$ 82,605,043	$205,367,314
Category 3	10%	$ 9,833,975	$ 20,935,821	$ 26,174,412	$ 56,944,208
	20%	$19,667,950	$ 41,871,642	$ 52,348,824	$113,888,416
	30%	$29,501,925	$ 62,807,463	$ 78,523,236	$170,832,623
	40%	$39,335,900	$ 83,743,284	$104,697,648	$227,776,831
	50%	$49,169,875	$104,679,105	$130,872,060	$284,721,039

Annex: Methodology

This rapid assessment utilizes the 2018 Economic Survey Series (ESS) data (the latest available) and the 2019 Labour Force Survey data – both provided by the PCBS. The methods applied are geared towards quantifying the business and worker categories detailed in Table 1 of this report, which presents a matrix of response options proposed by the MoL to respond to the economic crisis resulting from the COVID-19 pandemic.

To complete the assessment, three business categories representing the three broad rows of the matrix of response options are defined as (1) Businesses with sufficient liquidity despite the crisis, (2) Businesses facing liquidity constraints affecting operations and payroll due to the crisis and (3) Businesses expected to cease activities and dismiss all workers.

The analysis relies upon the PCBS forecast of the impact of COVID-19 restrictions on GDP by sector as detailed in Table 2 of this report. The simulation reflects the impact of the expected drop in GDP using the coefficients of a regression model – estimated with the ESS data – relating business level revenue with business level value added controlling for business size, sector of activity and region, with interaction terms for value added, business size and sector. The model results are listed in Table A1.

The estimated parameters are utilized to simulate business level revenue given the forecasted GDP change. Finally, simulated free cash flow is estimated using the simulated revenue under the assumption of constant fixed costs. This is relied upon in estimating the three business categories as follows:

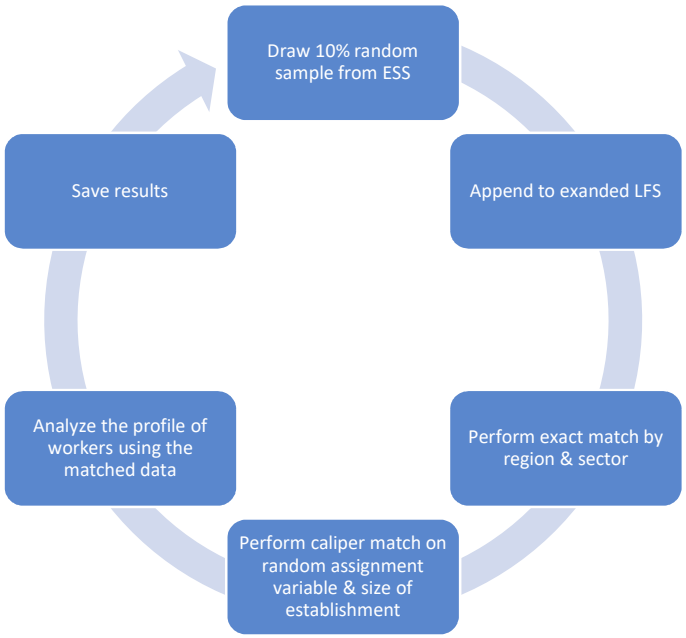
- **Category 1**: Businesses simulated to maintain positive cash flow following the COVID-19 shock;
- **Category 2**: Businesses simulated to have negative cash flow following the COVID-19 shock;
- **Category 3**: Businesses estimated to have had negative cash flow previous to the COVID-19 shock.

Accordingly, jobs within Category 1 businesses are considered to be secure, while jobs within Category 2 businesses are considered to be vulnerable and jobs within Category 3 businesses are assumed to be lost.

However, the objective of the analysis is not only to categorize businesses in the Palestinian private sector according to the impact of the COVID-19 pandemic, but also to build a profile of the workers employed by these businesses, the degree of informality in their contractual arrangements and hence access to leave and other benefits that they may rely upon.

In light of the limitations of the ESS data, the analysis seeks to augment the data with additional information from the LFS data. Yet, as the ESS and LFS are drawn from completely different sample frames, they offer no direct approach to merging the two data sets. Therefore, this analysis draws upon Monte Carlo methods to perform a randomized repeat sampling and matching algorithm in order to infer additional information about the profile of workers that are simulated to lose their work (Category 3) or those whose jobs are vulnerable (Category 2).

Figure A1: Repeat sampling and matching process



The analysis starts with drawing a random sample of businesses included in the ESS data, which is subsequently appended to the LFS data. The LFS data is expanded using the sampling weights to maximize matching opportunities. The matching algorithm utilized in the analysis performs an initial exact matching exercise based upon the region or residence and sector of economic activity. Essentially, this means that workers in the Gaza Strip (West Bank) can only be matched to businesses in the Gaza Strip (West Bank) and only within the same sector.

Following that, a caliper match is performed on two variables. The first is a random variable that is drawn with every iteration and which introduces a random element into the matching exercise. This random variable is drawn from a uniform distribution ranging from 0 to 10, while the caliper width is set at 3. This ensures that in every iteration matching can be performed within only a third of the LFS records, selected randomly. The second caliper match variable is an ordinal variable representing size of establishment with values ranging from 1 for small businesses up to 3 for large businesses. The caliper width is set at 1, which ensures that workers in the LFS data reported to work in small businesses could not be matched with large businesses in the ESS data or workers reported to work in large businesses could not be matched with small businesses. Overall, this algorithm results in 1-to-1 matching, without replacement, of workers in the LFS data (cases) with businesses in the ESS data (control) similar to how it would be performed in quasi-experimental methods of evaluation.

Once the matching is performed, basic tabulations of worker characteristics such as sex, age group, occupation and skill level or contractual arrangements are saved for each iteration. The analysis presented in this paper – specifically Figures 1 through 6 – reflects the mean results from a total of 500 iterations.

Table A1: Regression model main results. Independent Variable = ln(Revenue)

VARIABLES	Coefficients
ln(VA) [VA = Value Added]	0.398*** (0.0460)
Medium Business	-1.575** (0.706)
Large Business	3.051* (1.704)
Medium Business X ln(VA)	0.158** (0.0633)
Large Business X ln(VA)	-0.109 (0.132)
Sector: Manufacturing	-4.115*** (0.483)
Sector: Electricity, gas, steam and air conditioning supply	-2.009 (1.561)

Sector: Water supply; sewerage, waste management and remediation activities	-2.746*** (0.556)
Sector: Construction	-4.298*** (0.547)
Sector: Wholesale and retail trade; repair of motor vehicles and motorcycles	-2.659*** (0.482)
Sector: Transportation and storage	-3.076*** (0.516)
Sector: Accommodation and food service activities	-4.853*** (0.484)
Sector: Information and communication	-3.370*** (0.525)
Sector: Real estate activities	-5.837*** (0.559)
Sector: Professional, scientific and technical activities	-5.288*** (0.488)
Sector: Rental and leasing activities	-4.932*** (0.495)
Sector: Education	-5.547*** (0.491)
Sector: Human health and social work activities	-3.005*** (0.487)
Sector: Arts, entertainment and recreation	-5.193*** (0.487)
Sector: Other service activities	-5.426*** (0.483)
Manufacturing X ln(VA)	0.344*** (0.0461)
Electricity, gas, steam and air conditioning supply X ln(VA)	0.172 (0.163)
Water supply; sewerage, waste management and remediation activities X ln(VA)	0.219*** (0.0546)
Construction X ln(VA)	0.377*** (0.0525)
Wholesale and retail trade; repair of motor vehicles and motorcycles X ln(VA)	0.234*** (0.0460)
Transportation and storage X ln(VA)	0.216*** (0.0497)
Accommodation and food service activities X ln(VA)	0.438*** (0.0464)
Information and communication X ln(VA)	0.215*** (0.0513)
Real estate activities X ln(VA)	0.451*** (0.0547)
Professional, scientific and technical activities X ln(VA)	0.406*** (0.0467)
Rental and leasing activities X ln(VA)	0.377*** (0.0477)
Education X ln(VA)	0.435*** (0.0473)
Human health and social work activities X ln(VA)	0.181*** (0.0466)
Arts, entertainment and recreation X ln(VA)	0.380*** (0.0467)
Other service activities X ln(VA)	0.405*** (0.0462)
Medium Business X Manufacturing	1.806** (0.712)
Medium Business X Electricity, gas, steam and air conditioning supply	0.195 (1.909)
Medium Business X Water supply; sewerage, waste management and remediation activities	0.598 (0.936)
Medium Business X Construction	3.047*** (0.822)
Medium Business X Wholesale and retail trade; repair of motor vehicles and motorcycles	1.005 (0.707)
Medium Business X Transportation and storage	2.760*** (0.767)
Medium Business X Accommodation and food service activities	0.906 (0.738)
Medium Business X Information and communication	0.0649 (0.864)
Medium Business X Real estate activities	1.690 (1.141)
Medium Business X Professional, scientific and technical activities	1.745** (0.747)
Medium Business X Rental and leasing activities	0.910 (0.784)
Medium Business X Education	1.590** (0.724)
Medium Business X Human health and social work activities	0.818 (0.776)
Medium Business X Arts, entertainment and recreation X	1.918*** (0.727)
Medium Business X Other service activities	3.806*** (0.717)
Large Business X Manufacturing	-2.709 (1.720)
Large Business X Electricity, gas, steam and air conditioning supply	-9.167 (9.331)

Large Business X Water supply; sewerage, waste management and remediation activities	1.764 (7.378)
Large Business X Construction	-1.932 (1.820)
Large Business X Wholesale and retail trade; repair of motor vehicles and motorcycles	-2.351 (1.739)
Large Business X Transportation and storage	-4.536** (1.882)
Large Business X Accommodation and food service activities	-0.0981 (1.842)
Large Business X Information and communication	-5.445*** (1.838)
Large Business X Real estate activities	-3.782 (5.774)
Large Business X Professional, scientific and technical activities	-1.318 (1.873)
Large Business X Rental and leasing activities	-2.643 (1.973)
Large Business X Education	-1.918 (1.727)
Large Business X Human health and social work activities	-3.707** (1.747)
Large Business X Arts, entertainment and recreation X	-1.740 (2.222)
Large Business X Other service activities	-3.332* (1.730)
Medium Business X Manufacturing X ln(VA)	-0.134** (0.0639)
Medium Business X Electricity, gas, steam and air conditioning supply X ln(VA)	-0.0179 (0.190)
Medium Business X Water supply; sewerage, waste management and remediation activities X ln(VA)	-0.0425 (0.0879)
Medium Business X Construction X ln(VA)	-0.256*** (0.0738)
Medium Business X Wholesale and retail trade; repair of motor vehicles and motorcycles X ln(VA)	-0.0309 (0.0635)
Medium Business X Transportation and storage X ln(VA)	-0.218*** (0.0696)
Medium Business X Accommodation and food service activities X ln(VA)	-0.0751 (0.0669)
Medium Business X Information and communication X ln(VA)	0.0172 (0.0787)
Medium Business X Real estate activities X ln(VA)	-0.142 (0.0999)
Medium Business X Professional, scientific and technical activities X ln(VA)	-0.160** (0.0674)
Medium Business X Rental and leasing activities X ln(VA)	-0.0716 (0.0710)
Medium Business X Education X ln(VA)	-0.150** (0.0655)
Medium Business X Human health and social work activities X ln(VA)	-0.0597 (0.0706)
Medium Business X Arts, entertainment and recreation X ln(VA)	-0.154** (0.0657)
Medium Business X Other service activities X ln(VA)	-0.346*** (0.0646)
Large Business X Manufacturing X ln(VA)	0.159 (0.133)
Large Business X Electricity, gas, steam and air conditioning supply X ln(VA)	0.606 (0.574)
Large Business X Water supply; sewerage, waste management and remediation activities X ln(VA)	-0.0758 (0.483)
Large Business X Construction X ln(VA)	0.0842 (0.142)
Large Business X Wholesale and retail trade; repair of motor vehicles and motorcycles X ln(VA)	0.184 (0.134)
Large Business X Transportation and storage X ln(VA)	0.316** (0.147)
Large Business X Accommodation and food service activities X ln(VA)	-0.0801 (0.143)
Large Business X Information and communication X ln(VA)	0.377*** (0.142)
Large Business X Real estate activities X ln(VA)	0.196 (0.400)
Large Business X Professional, scientific and technical activities X ln(VA)	0.0182(0.146)
Large Business X Rental and leasing activities X ln(VA)	0.120 (0.152)
Large Business X Education X ln(VA)	0.0402 (0.134)
Large Business X Human health and social work activities X ln(VA)	0.257* (0.135)
Large Business X Arts, entertainment and recreation X ln(VA)	0.0901 (0.175)

Large Business X Other service activities X ln(VA)	0.175 (0.134)
Region: Gaza Strip	0.0494*** (0.00394)
Constant	7.662*** (0.482)

Observations = 136,240; R-squared = 0.826; Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

It is important to note that this rapid analysis faces limitations and rests upon significant assumptions. Among the limitations is the fact that ESS data does not include agriculture or the financial and insurance services. Also, the data utilized is from 2018 as the 2019 ESS data has not yet been released by PCBS.

Among the assumptions is the basic proposition that a negative cash flow represents a sign of distress and imminent bankruptcy. It is true that a negative cash flow is often taken as a sign of vulnerability, although that could be misleading under certain circumstances. For example, it is possible that growing businesses with significant capital expenditures – a sign of future productivity growth – can have negative free cash flow. However, the overall economic environment in Palestine in the 5 years leading up to 2020 has been difficult and bears no signs of significant investment.