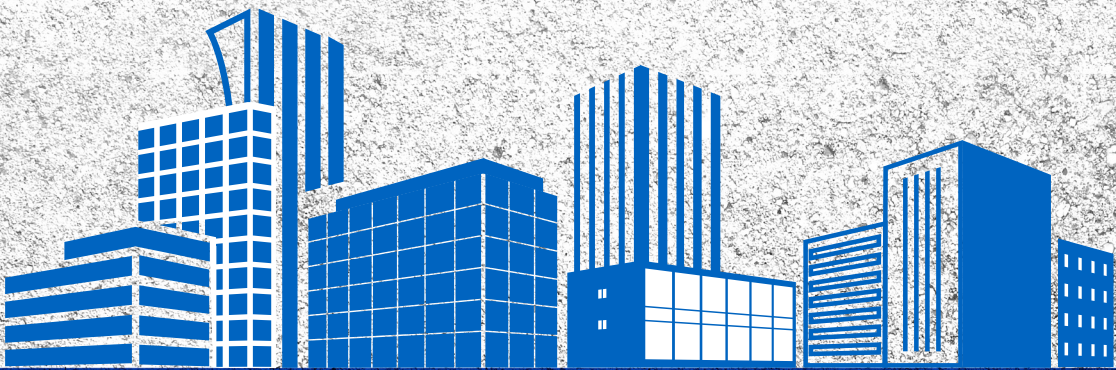




The impact of the crisis induced by the conflict in Ukraine on firms in North Macedonia: Evidence from a micro-survey



Policy study no. 46

THE IMPACT OF THE CRISIS INDUCED BY THE CONFLICT IN UKRAINE ON FIRMS IN NORTH MACEDONIA: EVIDENCE FROM A MICRO-SURVEY

Marjan Petreski

University American College Skopje / Finance Think – Economic
Research & Policy Institute, Skopje

The study has been reviewed by an anonymous referee.

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1. INTRODUCTION

Following the Russian Federation's invasion of Ukraine on February 24, 2022, the political and economic landscape of Europe underwent a profound transformation, defying previous expectations. In response to this act of aggression, the Western allies swiftly implemented multiple rounds of sanctions targeting the Russian Federation, primarily with the intention of severing its economic connections with European and American nations (UN, 2022). While the main consequences of these sanctions were projected to impact the Russian economy, their repercussions extended beyond the imposing countries, affecting the global community as a whole (Borin et al. 2022; Darvas and Martin, 2022). This was due to Russia's significant role as a major exporter of essential commodities like grains, food, base metals, and, notably, energy. Some European economies, particularly Germany, were heavily reliant on Russian gas. Although the gas supply remained unaffected and only experienced relative reductions until late 2022, the emerging economic dynamics led to an unprecedented distortion in the markets.

Firstly, critical shortages have arisen in the European and global grains and food markets, primarily caused by Russia's restriction on grain exports from Ukraine, directly impacting consumers (Artuc et al. 2022). Secondly, the instability in these markets, coupled with the scarcity of base metals like copper, nickel, and cadmium, has further exacerbated the challenges faced by numerous industries, including the automotive sector, which continues to grapple with supply chain disruptions stemming from the fading COVID-19 pandemic. Thirdly, tensions surrounding the supply of gas and other energy products have emerged due to the decline in energy production on the European continent, particularly the reduced generation of electricity from renewable sources throughout 2021. These disruptions in the markets have exerted significant influence on the prices of a wide range of products, resulting in a sharp increase during the first half of 2022. The new economic framework has compelled households and businesses to adapt to soaring prices, leading to a rapid decline in their real incomes (adjusted for inflation). Consequently, these circumstances have generated substantial recessionary pressures by the end of 2022, with forecasts indicating that certain European economies would enter a recession as early as 2023 (World Bank, 2022).

Firms have been particularly exposed to the perils of the emerging crisis, as the COVID-19 weakened them already, particularly the small firms. At the time the aggression started, firms were slowly weaning themselves off government support. The crisis implicated onto firms through a variety of channels. First, firms' energy bills soared amid the skyrocketing electricity

and gas prices. Second, the weakening economy manifested into reduced foreign trade, which was important growth-and-competitiveness channel for large share of firms directly, as well for many others indirectly. Third, the prices of raw materials widely, and particularly in agriculture and food industries significantly increased, particularly being important for a country that is net-importer. Fourth, the access to finance tightened both due to the tightening signals of the central banks and commercial banks' changed preferences to risks.

Emerging studies already suggest large negative effects of the war in Ukraine for the firms, particularly across Europe. For example, EIB (2022) estimated in one year, the proportion of firms in the EU generating losses increases from 8% to 15% and the risk of default rises from 10% to 17%. Chemicals and pharmaceuticals, transport, and food and agriculture are the hardest-hit sectors. The global academic literature on the current crisis, albeit nascent, already depicts the negative abnormal returns triggered by the crisis due to the geopolitical risks and trade dependence (Abbassi et al. 2023; Orhan, 2022; Lo et al. 2022), lower corporate security prices and higher asset volatility (Bougias et al. 2022), lower equity returns particularly for high energy-intensity and carbon-emission-intensity firms (Ferriani and Gazzani, 2023), the inflation pressure transmitted onto own-product prices (Ropele and Tagliabracci, 2022) and so on.

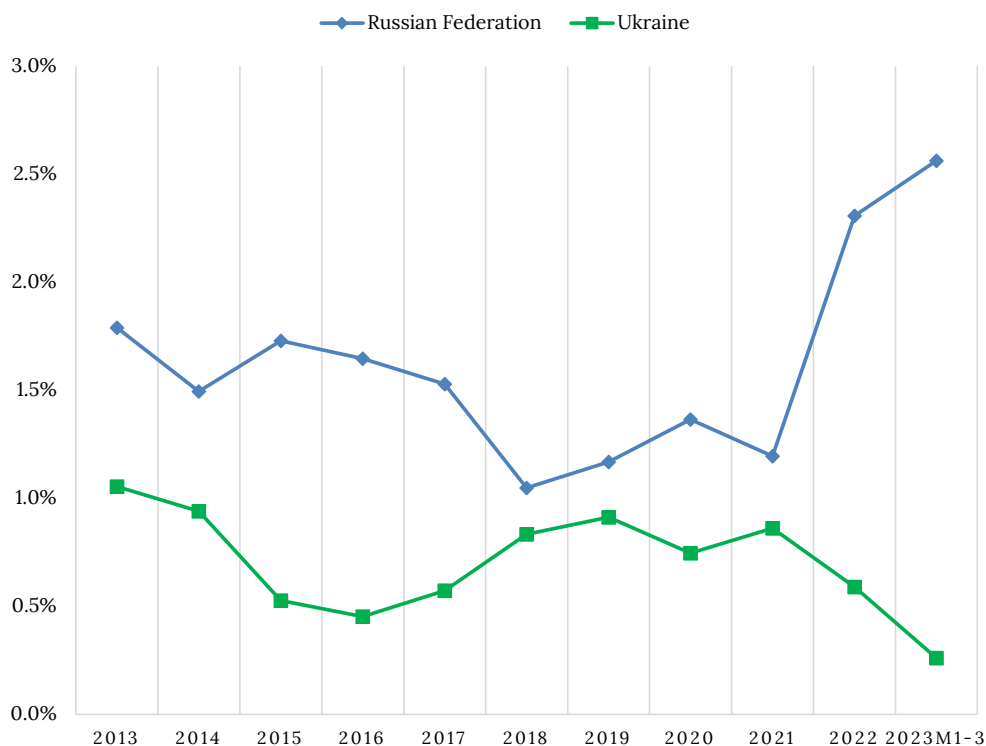
The objective of this study is to assess the impact of the crisis induced by the conflict in Ukraine on the firms in North Macedonia. We rely on a freshly-collected micro survey of firms to gauge the ways and strength with which firms felt the crisis. The exercise serves a foundation for designing a roadmap for mitigating policy measures at the national level.

The study is organized as follows. Section 2 reviews the perils for the Macedonian firms stemming from the crisis induced by the conflict in Ukraine. Section 3 reviews the government measures adopted to protect firms during the crisis. Section 4 discusses the methodological considerations. Section 5 presents the results of the survey documenting the impact of the crisis for the Macedonian firms. Section 6 summarizes the conclusions and develops policy recommendations.

2. RISKS FOR THE FIRMS IN NORTH MACEDONIA

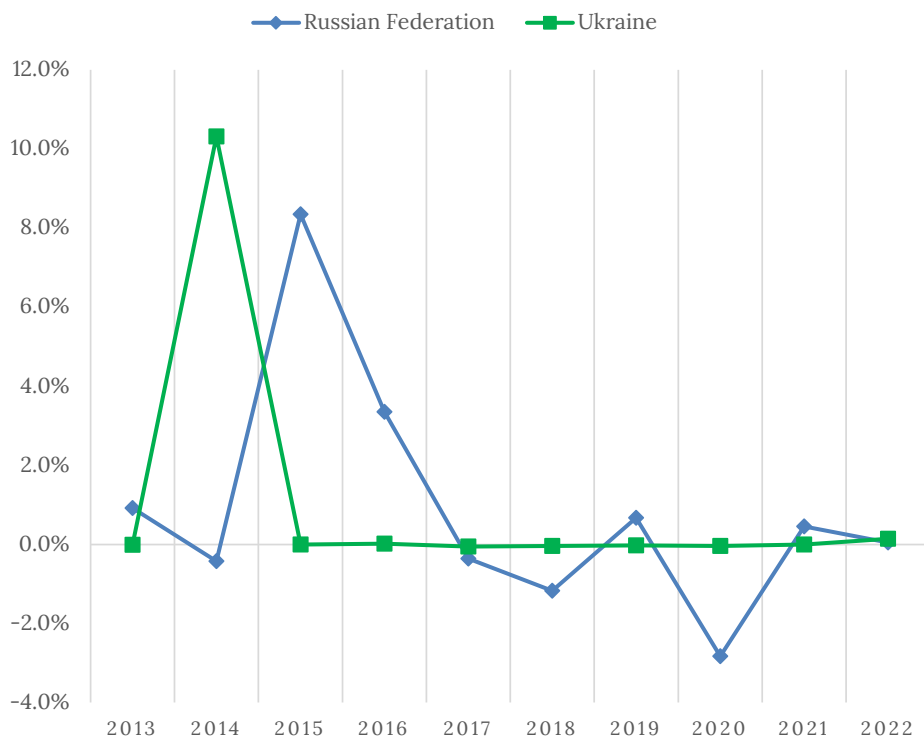
North Macedonia has very weak economic ties with both Russia and Ukraine. These countries do not participate with more than 2.5% in North Macedonia's foreign trade (**Figure 1**). Yet, it should be noted that about a fifth of the fertilizers were imported from Russia in 2021, which together with gas and metals comprised most of the imports. Russia's and Ukraine's share in foreign direct investment inflow averaged less than a quarter of a percent over the last decade, with exception of certain years whereby Russian or Ukrainian companies entered the market mainly in the mining and oil trade (**Figure 2**). The financial system does not have Russian or Ukrainian bank or other financial institution. All this protected the economy from the direct impact of the crisis.

Figure 1 – Share of trade with Russia and Ukraine in total trade of North Macedonia



Source: State Statistical Office.

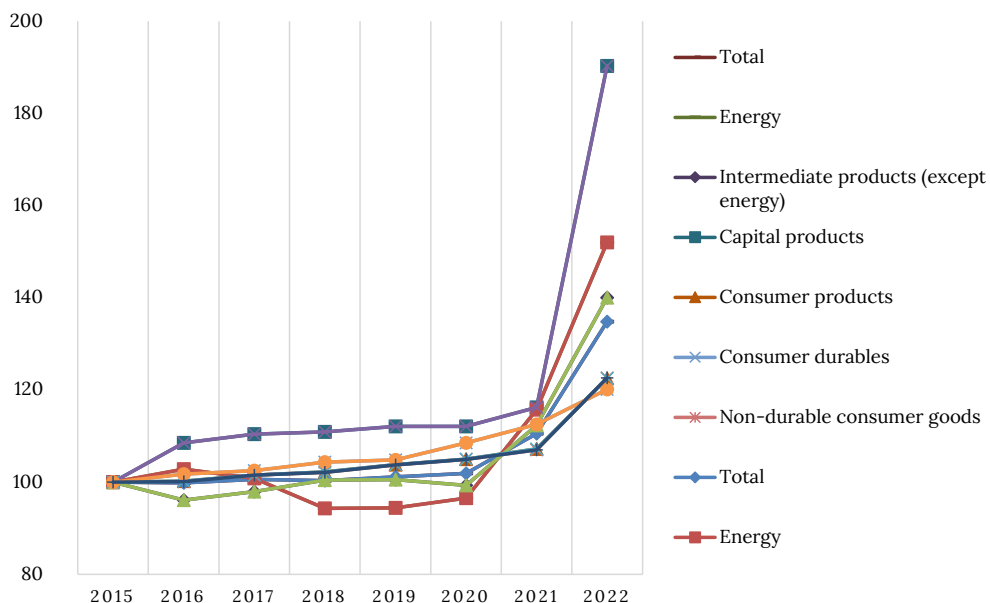
Figure 2 – Share of annual FDI inflow from Russia and Ukraine in North Macedonia in total FDI inflow



Source: National Bank of the Republic of North Macedonia.

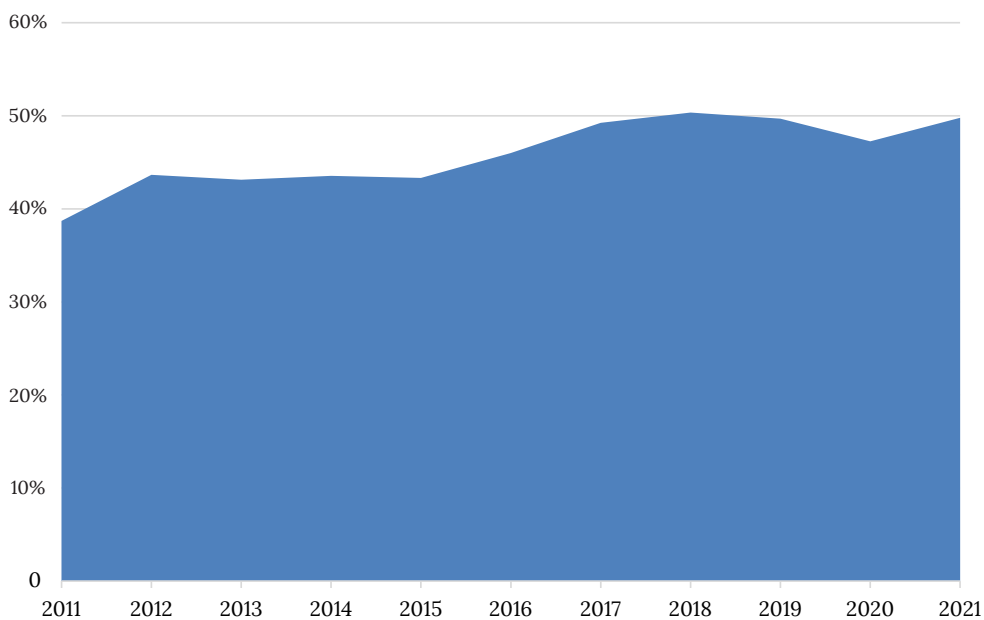
However, Macedonian firms has been indirectly affected in several ways. As a result of considerable trade openness, rising prices of key food and energy products were directly transmitted to the economy already in the first half of the year. By the end of 2022, inflation reached 19.5%, with an annual average of 14.2%, a level not seen since country's transition years in the early 1990s. Selling prices in manufacturing soared in 2022 (Figure 3), driven by the high input prices of, primarily, energy, though also the imported raw materials. Though, the observed price effect of the imported raw materials could be approximated by considering that almost half of the consumption of food, drinks and tobacco in the economy is being imported (Figure 4), which makes domestic firms price takers to a large if not exclusive extent. Within the primary food items, whose prices saw unprecedented surge on the global market, wheat supplies and nearly all of sunflower oil in North Macedonia is imported, which has been coupled with the dependence on fertilizers supply from Russia.

Figure 3 – Selling prices of industrial producers (2015=100)



Source: State Statistical Office.

Figure 4 – Share of import of food, drinks and tobacco in the total consumption of food, drinks and tobacco in North Macedonia

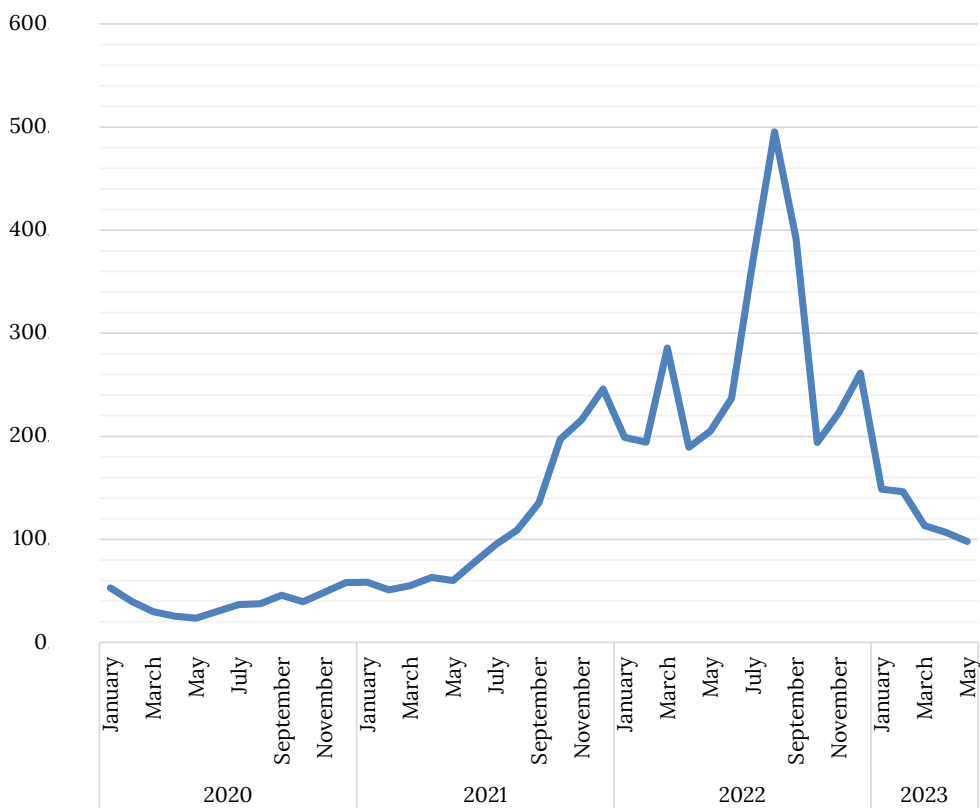


Source: State Statistical Office.

Note: The import of food, drinks and tobacco includes live animals, which is not included in the respective consumption item as such.

Large firms in North Macedonia have been particularly exposed to the energy/electricity price shock. Namely, only large firms in the country purchase electricity on the open market, usually on the Hungarian electricity market HUPX. **Figure 5** documents the electricity price shock culminating in the summer of 2022, when the price of electricity per MWh has been twelfold compared to the average of 2020. Households and small business consumers (initially defined as those with not more than 50 employees and annual turnover not exceeding 10 mln. EUR) are shielded from the electricity price volatility through operating on the regulated market. **Table 1** presents the regulated prices on dates when the Energy and Water Services Regulatory Commission has been correcting the price. For example, since the onset of 2023, the price for MWh for the small business consumers has been fixed at about 179 EUR/MWh, being about two thirds of the 2022 average on the free market and above the January–May 2023 average of 120 EUR/MWh.

Figure 5 – Average monthly prices of electricity on the open market (EUR/MWh)



Source: HUPX.

Table 1 – Regulated prices for households and small business consumers (MKD/KWh)

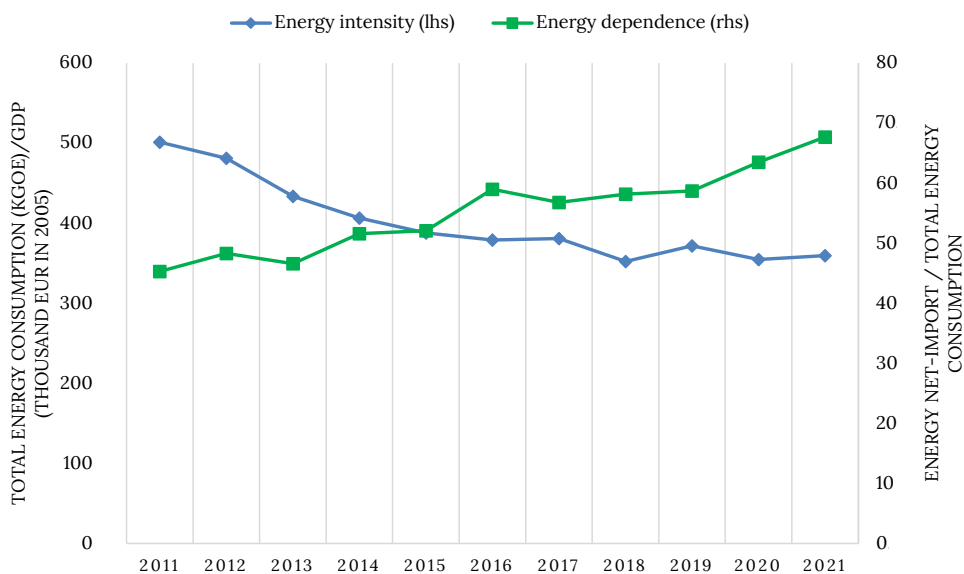
Category	1.8.2020	1.7.2021	1.1.2022	1.7.2022	1.1.2023
Households, upper tariff*	5.9500	6.6900	7.3200	4.3484	4.7257
Households, lower tariff	2.9900	3.3600	3.6700	0.6193	1.3183
Small consumers, upper tariff	9.2700	10.4200	11.4100	13.8204	11.05
Small consumers, lower tariff	-	-	-	10.1348	8.1
Transmission and distribution fee	1.768	1.767	2.4570	2.6237	2.6795

Source: Energy and Water Services Regulatory Commission.

Note: Since July 1, 2022, households are subject to progressive electricity price dependent on their consumption. The basic tariff (tariff 1) is shown in this table.

Both energy intensity and energy dependence are high in North Macedonia, which heavily reflects onto firms work and competitiveness. The energy intensity is very high in the country, despite the improvements over the last decade (**Figure 6**). Yet, with about 350 kilograms of oil equivalent per thousand EUR of GDP, the country is still thrice less energy efficient than the EU average (117 in 2021, Eurostat: NRG_IND_EI). This trend has been accompanied with growing energy dependence of the country, whereby more than two thirds of the energy consumption in 2021 has been supplied from import.

Figure 6 – Energy intensity and dependence in North Macedonia



Source: State Statistical Office.

3. HOW HAS THE GOVERNMENT HELPED?

Government measures in North Macedonia have been primarily directed towards regulating prices of electricity and depressing prices of some primary food products in order to prevent a more severe erosion of the living standard of households. Only few of the measures were aimed at firms, and part of them already existed even before the crisis started aiming to support the green transition. Earlier, in the winter of 2021/22, the Government declared ‘energy crisis’ that allowed it to allocate additional funds from the central budget to electricity production and central heating companies. The ‘energy crisis’ was extended over 2022.

Over 2022, two packages of anti-crisis measures were adopted in a total declared value of 760 mln. EUR. Of the total of 33 measures in the two packages, 16 were aimed at companies (or companies and households), and these are presented in **Table 2**. With the exception of the regulation of the electricity/heating energy price for the small business consumers, which essentially boils down to subsidizing the price of electricity/heating energy by the government, the rest of the measures have been channeled through the Development Bank, and many of them, like the green lines from EBRD, Guarantee Fund etc. existed before, i.e. they ameliorate the effects of the crisis, but cannot be directly attributed to it.

Table 2 – Government measures aimed at firms

	Targeted towards	Responsible institution
1. Subsidizing the price of electricity for the regulated market (for households and small business consumers) – enacted at the end of 2021	SMEs	Government through ESM – Electricity production company
2. Subsidizing the price of heat energy (for households and small business consumers of central heating)	SMEs	Government through ESM – Electricity production company
3. Change in electricity price setting methodology for households and small business consumers on the regulated market	SMEs	Energy and Water Services Regulatory Commission
4. Loans for investment in projects for energy efficiency and renewable energy sources, with an interest rate not exceeding 1.6%	SMEs	Development Bank

5.	New line to support the economy through the European Investment Bank for a green transition	SMEs	Development Bank
6.	Green financing through the EBRD, the UNDP and commercial banks (for households and SMEs)	SMEs	Development Bank
7.	Financial support through direct lending from the Development Bank to companies	SMEs	Development Bank
8.	Financial support through commercial banks with interest-free loans for working capital	SMEs	Development Bank
9.	Credit line for SMEs to support liquidity	SMEs	Development Bank
10.	Credit line for production, refinement and export of agricultural products	SMEs	Development Bank
11.	Subsidized price of 80 EUR/MWh for food production companies	Large firms	Government / MoE
12.	Use of the Guarantee Fund at the Development Bank	All firms	Development Bank
13.	Subsidizing of contractual interest rate on loans granted by commercial banks to business entities that will reinvest the profit for 2021	All firms	Government / Development Bank
14.	Autonomous measure for the import of basic food products and raw materials that have customs duties from all countries	All firms	MoF / Customs Office
15.	Exemption of VAT in the import of electricity, natural gas, heat energy and cooling energy	All firms	MoF / Customs Office
16.	Consultative support for the development of feasibility studies for energy efficiency and renewable energy projects	All firms	Government / MoE

Source: Authors' compilation based on announcements at www.vlada.mk.

Only two of the measures refer to reduction of the input prices for companies: the one for the reduction of the customs duties on basic food products and raw materials, helping out in depressing the global prices but not their volatility; and the fixation of the electricity price for the food industry in order to stabilize the prices of the basic food product like bread, milk and meat. The latter, however, was short-lived as it did not result in significant decline in the final product prices. Hence, overall, no measure was offered by the government that directly and explicitly targeted companies, particularly the large ones which purchased the electricity on the open market and were most heavily exposed to the electricity price increase in 2022. For this reason, we put less emphasis on the government measures in understanding the manner in which companies withstood the crisis.

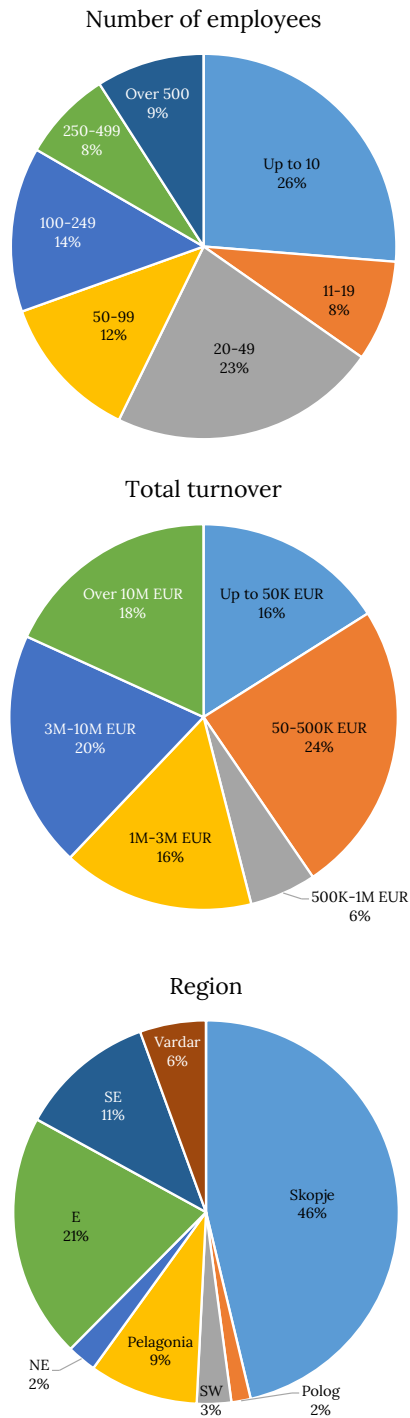
4. METHODOLOGICAL NOTE

The underlying data collection instrument for this analysis is the Survey on the impact of the crisis induced by the conflict in Ukraine on firms in North Macedonia. The Survey has been administered over a heterogeneous sample of 112 companies in North Macedonia of various sectors, sizes and regions in the country in the course of April and May 2023. In general, there is no sufficiently-developed culture on answering surveys in North Macedonia, which prevents that a fully representative sample is obtained. Data collectors face large non-response rates. In our case, the survey was sent to a large list of over 2,000 companies, of which the response rate was about 6%.

To overcome potential problems with biased sample, we used the national statistics on firms to create weights which we use throughout the entire analysis. Namely, we rely on the number of firms per sector (a total of 13 aggregated sectors are used) from the State Statistical Office of North Macedonia, in order to accordingly weight the firms in our survey and secure satisfactory potential of inference. By equalizing the sectoral distribution of the firms in our sample with that of the national statistics, we obtain the following distribution on three other metrics: seize by employees and turnover, and the regional distribution (**Figure 7**). We observe distributions which sufficiently well reflect the distribution of firms within the national statistics.



Figure 7 – Weighted sample characteristics



Source: Survey on the impact of crisis induced by the conflict in Ukraine on firms 2023.

The questions in the Survey were divided in a couple of themes:

- The impact of the crisis on the production costs
- Energy use and prices
- Cost of labor
- Cost of services used in the firm
- Demand for firm's product and services
- Observations for the general operations of the firm.

In the following section, we use descriptive tables and graphs to present the answers on various questions in their frequencies and distribution across the observable characteristics of the firm, like sector, size (employees and turnover) and the extent to which a firm is an exporter. It is to be noted that we apply certain aggregation of sectors on agriculture, industry, construction, low-pay services (trade, transport and hotels); medium pay services (administrative, professional and personal services); and high-pay services (finance, insurance, real estate and IT). The latter resonates the idea to which exported were more hit by the price hikes due to their direct exposure to the global developments.

Finally, to understand the impact of the crisis for firms' adjustment mechanism and competitiveness, we rely on an ordered probit regression of the following type:

$$P(\text{outcome}_i) = \alpha + \sum \beta_j X_i + \sum \gamma_j Z_i + \varepsilon_i$$

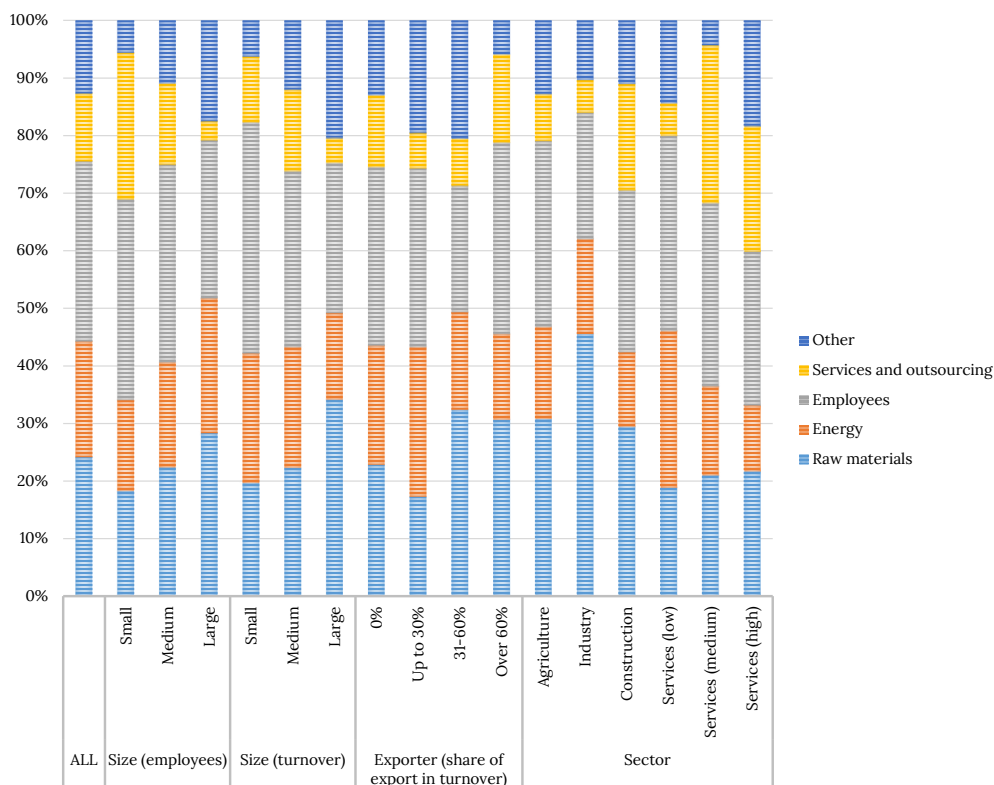
Whereby $P(\text{outcome}_i)$ stands for the probability that the firm reported that its final prices increased more than its total cost (a Likert scale 1-5) or that it responded that its competitiveness in 2022 compared to 2021 significantly deteriorated (a Likert scale 1-5); x_i is a vector of observable firm's characteristics: region, sector, size (employees and turnover) and the extent to which a firm is an exporter; z_i is another vector containing variables of our specific interest: the energy intensity of the firm (share of energy cost in total cost); labor intensity (share of labor cost in total cost); self-assessment about the behavior of the demand during the crisis; and a binary indicator signifying that the firm did not undertake any step to combat the increasing costs in raw materials, energy or labor. We estimate the above equation with an ordered probit technique and we comment in a general fashion about the way in which these firm's tenets affected the probability to fare the crisis better or worse.

5. SURVEY RESULTS

5.1 The impact of the crisis on production costs and costs of raw materials

The first set of results refers to the cost structure of the firms and the crisis impact onto the cost of the raw materials. **Figure 8** documents that, on average, the largest share of firms' costs are associated with the employees, 31.3%, followed by raw materials, 24.2% and energy 20.8%. However, there are some structural differences across the firms' categories. The share of raw materials costs is larger for larger firms, which are more frequently exporters belonging to the industry. Interestingly, the share of energy cost is the largest among low-pay service sectors like trade, transport and hotels (27.2%), which were inter-alia the strongest hit by the pandemic. Service and outsourcing cost is the largest among the smallest firms which are more frequently nested among the higher-pay service sectors. There are no stark differences in the share of the personnel cost.

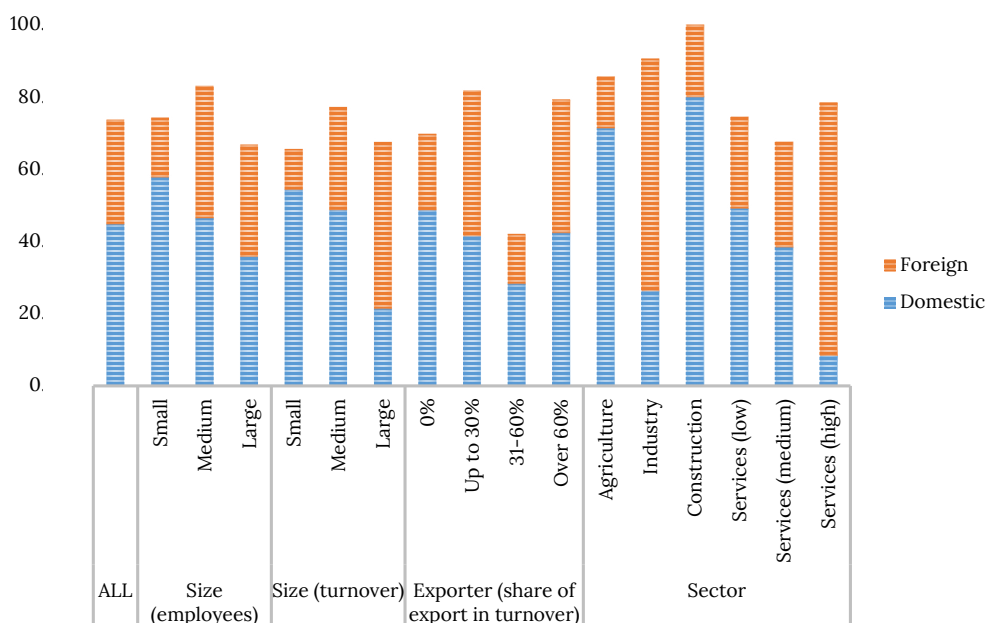
Figure 8 – Structure of firms' operational costs



Source: Survey on the impact of crisis induced by the conflict in Ukraine on firms 2023.

To understand the direct impact of the price hikes onto firms in North Macedonia, **Figure 9** presents the dominant origin of the raw materials they purchase (wherever this is applicable). In less than half of the cases, raw materials are purchased abroad, despite this percentage is significantly higher for larger and exporting firms working in the industry sector. This exposes these firms to rapid transmission of the global developments in the domestic economy, onto their profit margins and ultimately onto their output prices.

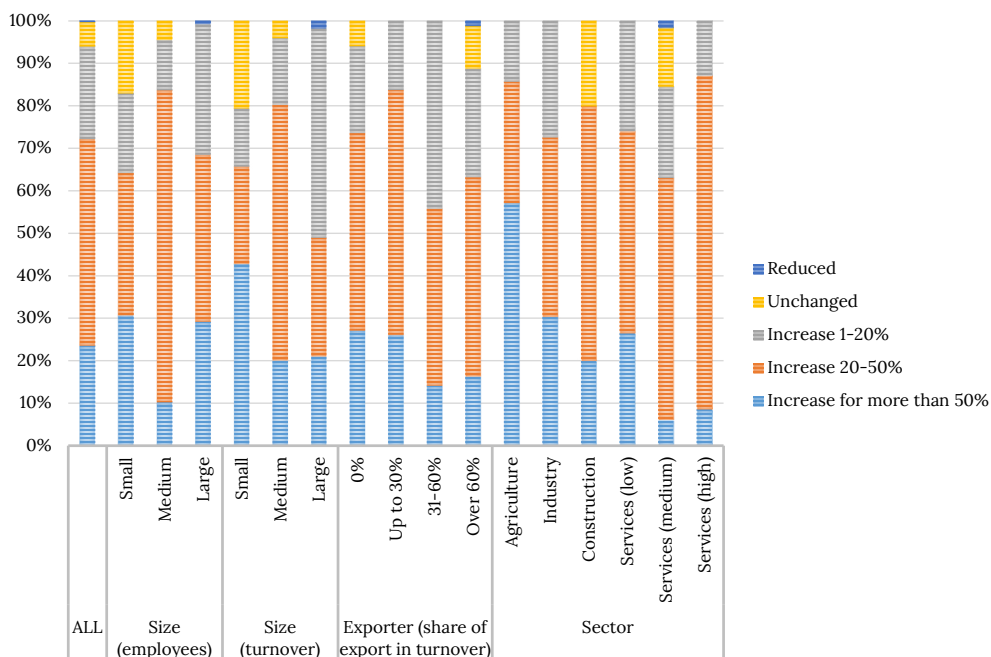
Figure 9 – The origin of the raw materials



Source: Survey on the impact of crisis induced by the conflict in Ukraine on firms 2023.

However, the reported raw material price increases in 2022 have not been the highest among the large industrial exporters. Equal share of large and small firms (30%) reported a raw material price increase that exceeded 50%, the share being even higher for the small firms observed by turnover. By sector, this share is the largest in agriculture, followed by industry and low-pay services. This reveals that the burden of the raw material price increases has been the heaviest for smaller firms in the low-pay sectors. Yet, for the rest of the disaggregation, the share of firms reporting a raw material price increase in the range 20-50% dominates. Interestingly, tiny share of the largest exporters reported a price decline.

Figure 10 – Price change of the key raw material (2022 compared to 2021)



Source: Survey on the impact of crisis induced by the conflict in Ukraine on firms 2023.

Table 3 presents the coping strategies of the firms with the increasing costs of raw materials. Note that on this and similar question, firms were free to choose as many alternatives as needed, and hence the vertical sum is higher than 100%. The coloring in the table presents the magnitude of the share/percentage, so that small percentages receive red, while high percentages green color.

Increasing the prices of their products (outputs) has been the most frequent strategy to cope with the increasing prices of raw materials, reported by 57.6% of the firms (**Table 3**). Yet, 46.4% of firms reported they undertook a cost consolidation strategy as well, in the other segments of the cost structure, while 37.6% postponed some planned investment. While firms of all sizes undertook output price increasing strategy, the cost reduction strategy was more a characteristic of the larger firms in agriculture, industry and low-pay services, whereby the price shock exerted the heaviest burden.

Table 3 – Ways of coping with the increased costs of raw materials

	Size (employees)			Size (turnover)			Exporter (share of export in turnover)				
	ALL	Small	Medium	Large	Small	Medium	Large	0%	Up to 30%	31-60%	Over 60%
Did not undertake anything	4.7%	12.4%	0.0%	3.5%	3.7%	6.3%	0.0%	4.1%	0.0%	0.0%	10.1%
Changed / diversified / negotiated with the supplier	20.8%	20.5%	20.7%	21.0%	14.1%	22.1%	21.7%	24.3%	22.0%	0.0%	15.8%
Focused on reducing the other operational costs	46.4%	18.2%	34.9%	71.9%	16.5%	49.3%	61.7%	38.3%	73.4%	28.4%	44.9%
Increased prices of our products (outputs)	57.6%	47.4%	60.4%	61.8%	43.8%	60.1%	60.4%	57.5%	68.8%	55.8%	49.8%
Reduced or stopped production while prices stabilize	5.9%	7.5%	0.0%	9.2%	9.4%	3.0%	13.1%	8.7%	0.0%	14.2%	3.6%
Postponed some planned investment	37.9%	35.7%	31.3%	44.0%	44.6%	35.7%	39.8%	40.3%	36.3%	41.7%	33.7%
Applied other strategy	17.6%	10.4%	10.6%	27.2%	11.2%	12.5%	41.2%	11.8%	25.0%	57.9%	18.5%

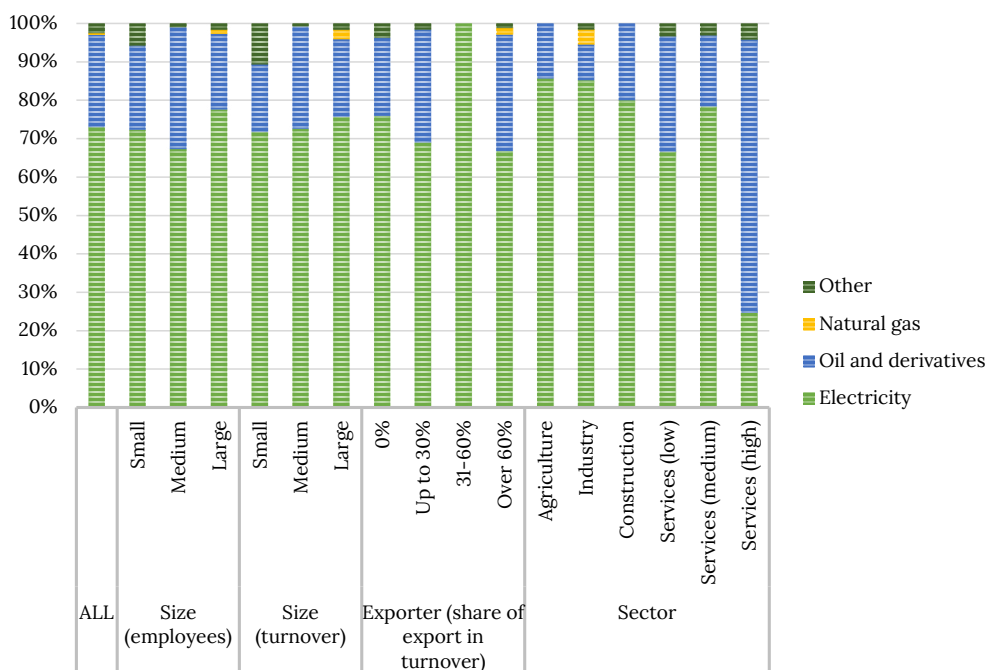
	Sector					
	Agriculture	Industry	Construction	Services (low)	Services (medium)	Services (high)
Did not undertake anything	0.0%	1.5%	0.0%	3.3%	13.9%	8.2%
Changed / diversified / negotiated with the supplier	14.3%	23.5%	0.0%	26.8%	20.0%	0.0%
Focused on reducing the other operational costs	100.0%	53.9%	20.0%	50.6%	43.1%	16.5%
Increased prices of our products (outputs)	85.7%	77.4%	60.0%	67.1%	26.1%	75.3%
Reduced or stopped production while prices stabilize	28.6%	3.9%	0.0%	9.7%	0.0%	0.0%
Postponed some planned investment	42.9%	53.9%	60.0%	38.7%	16.9%	4.1%
Applied other strategy	14.3%	11.7%	20.0%	27.8%	7.7%	0.0%

Source: Survey on the impact of crisis induced by the conflict in Ukraine on firms 2023.

5.2 The impact of the crisis on energy costs

Macedonian firms rely on electricity as the main source of energy, with 73.1% of respondents (**Figure 11**). The next meaningful energy input is oil and derivatives, with 24%. There are no stark differences when firms are observed by size, but only when observed sectorally. The share of electricity in the sources of energy is higher than the average in agriculture and industry, while the share of oil and derivatives is higher than the average in low-pay services (due to transport being part of it) and in high-pay services (despite this may be a reflection of the rather small total consumption of energy in these sectors).

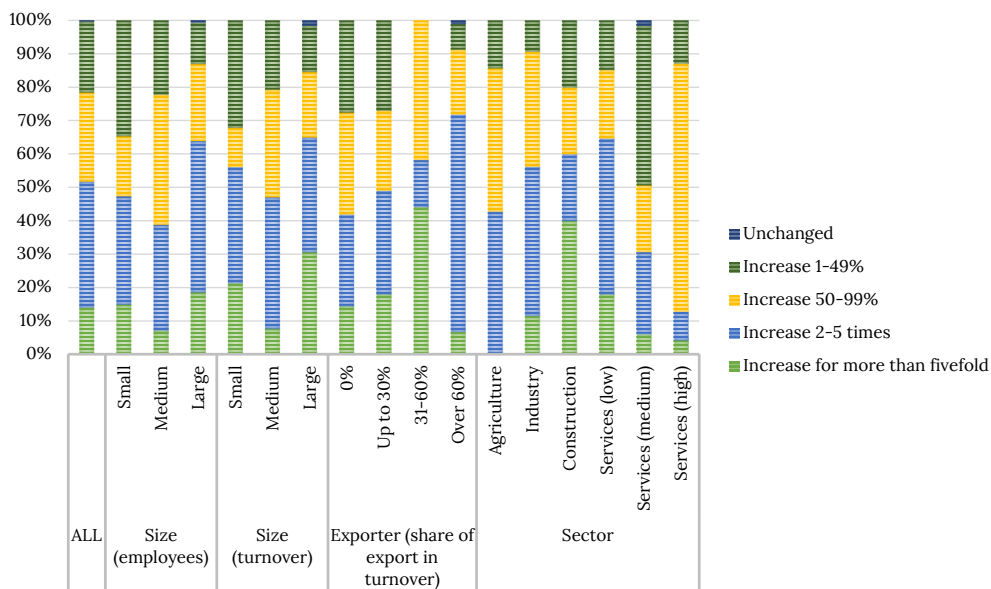
Figure 11 – The main energy input in firms



Source: Survey on the impact of crisis induced by the conflict in Ukraine on firms 2023.

For more than a third of firms (37.6%), the increase in the price of the key energy input ranged twofold to fivefold between 2021 and 2022 (**Figure 12**). This has been more so the case for the large firms which have been purchasing electricity on the open market, including the notion that larger share of them marked increase in this cost larger than fivefold compared to the previous year (30.7% for the firms whose turnover exceeds 10 mln. EUR annually). Sectorally, the increases in the energy cost has been the largest in construction (40% of firms reporting increase more than fivefold), while the lowest in medium-pay services (47.7% reporting increase up to 50%).

Figure 12 – Energy cost change (2022 compared to 2021)



Source: Survey on the impact of crisis induced by the conflict in Ukraine on firms 2023.

Sheer majority of small firms did not undertake anything to cope with the soaring energy cost (**Table 4**). This could be related to the fact that they operate on the regulated market, but also could reflect the limited resource capacities of these firms to withstand large shock onto their costs. On the other hand, large shares of medium and large firms (between 40% and 50%) reorganized the working process to reduce the energy consumption. It was mainly this-size firms who invested in energy efficient equipment, despite fairly small shares, as well who invested in own-energy production (41.5% of the large firms). Actually, over 2022 and 2023 there has been an expansion of installing own capacities – most frequently photovoltaics – for production of electricity for own consumption, along relaxing procedures for these processes (despite with some imminent hurdles).

Despite such structural adjustments particularly among the larger firms, still nearly half of them responded that they increased the prices of their own products and services as a response to the energy price shock, i.e. transmission of the burden onto consumers. Likewise, larger companies adjusted also through cost consolidation.

Sectorally, the reorganization of the processes to reduce the energy consumption has been more frequent in agriculture, industry and low-pay services. It was mostly industrial capacities who installed own-electricity-production facilities (43%). The transmission of the price shock onto own product prices has been mostly frequent in industry and construction, as well as surprisingly in high-pay services, although they did not suffer the largest burden of the energy prices. Cost consolidation as a strategy was present across all sectors.

Table 4 – Ways of coping with the increased costs of energy

	ALL	Size (employees)			Size (turnover)			Exporter (share of export in turnover)			
		Small	Medium	Large	Small	Medium	Large	0%	Up to 30%	31-60%	Over 60%
Did not undertake anything	18.8%	51.5%	9.6%	5.4%	27.5%	17.5%	16.1%	22.8%	9.4%	0.0%	20.2%
Reorganized the work process to reduce energy consumption	37.5%	6.5%	43.3%	52.3%	11.8%	41.2%	46.4%	31.2%	46.3%	42.1%	42.7%
Invested in energy-efficient machines and equipment	14.3%	11.1%	7.3%	21.4%	10.1%	14.0%	18.8%	8.4%	15.6%	14.2%	24.9%
Invested in machines and equipment using alternative energy sources	1.5%	0.0%	0.0%	3.5%	0.0%	2.3%	0.0%	2.9%	0.0%	0.0%	0.0%
Invested in energy-efficient equipment or new buildings/halls	4.8%	0.0%	4.5%	7.9%	0.0%	6.6%	2.6%	6.6%	7.4%	0.0%	0.0%
Invested in own energy production	20.8%	0.0%	9.7%	41.5%	0.0%	23.1%	30.4%	11.1%	23.7%	41.7%	34.8%
Timely purchased energy input, when prices were still favorable	4.9%	0.0%	6.3%	6.8%	0.0%	6.0%	5.0%	3.8%	7.8%	14.2%	3.5%
Increased prices of our products (outputs)	37.8%	19.4%	43.9%	44.7%	30.4%	37.7%	44.8%	38.1%	47.1%	41.7%	30.1%
Reduced the work scope (temporary or permanent lay-offs and/or production reduction in general)	12.3%	26.8%	0.0%	12.3%	37.8%	5.0%	16.2%	16.4%	0.0%	0.0%	14.7%
Focused on reduction of other operational costs	42.9%	7.2%	59.8%	52.6%	21.8%	43.3%	59.4%	38.3%	54.1%	86.3%	38.1%

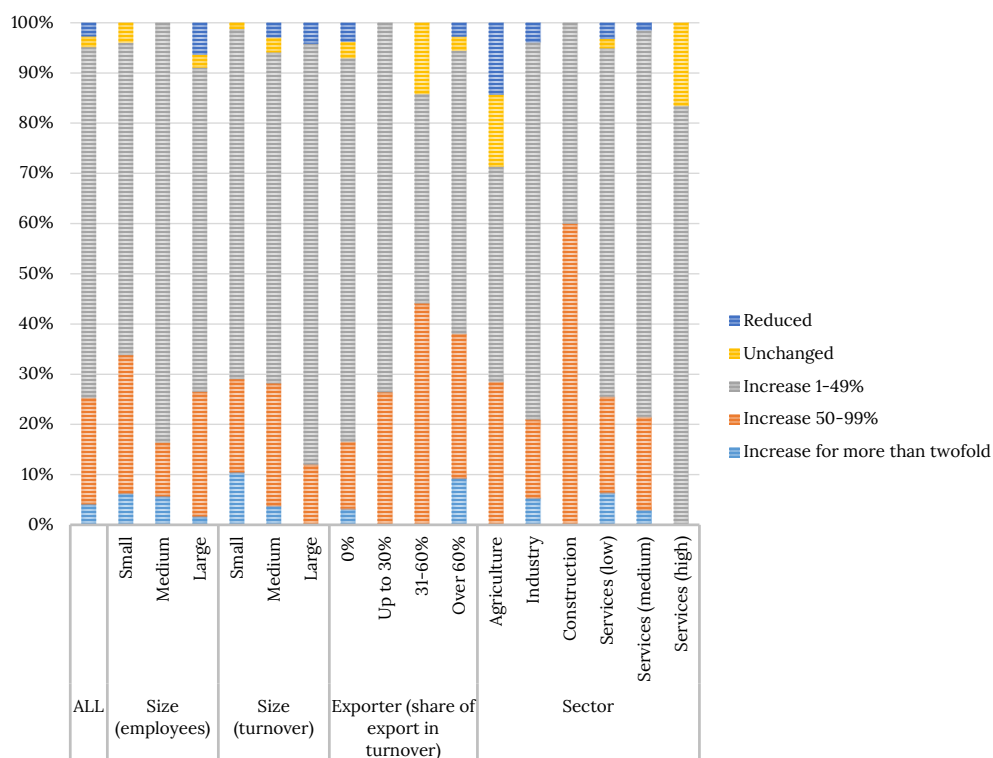
	Sector					
	Agri-cul-ture	Industry	Con struc-tion	Services (low)	Services (medi-um)	Services (high)
Did not undertake anything	0.0%	0.0%	20.0%	18.5%	44.6%	4.1%
Reorganized the work process to reduce energy consumption	57.1%	48.5%	20.0%	43.1%	27.7%	8.2%
Invested in energy-efficient machines and equipment	14.3%	11.7%	0.0%	19.1%	10.8%	4.1%
Invested in machines and equipment using alternative energy sources	0.0%	0.0%	0.0%	3.3%	0.0%	0.0%
Invested in energy-efficient equipment or new buildings/halls	14.3%	0.0%	0.0%	3.3%	0.0%	0.0%
Invested in own energy production	28.6%	43.0%	20.0%	17.3%	26.1%	4.1%
Timely purchased energy input, when prices were still favorable	28.6%	7.8%	0.0%	6.5%	0.0%	0.0%
Increased prices of our products (outputs)	28.6%	67.2%	60.0%	37.2%	10.8%	75.3%
Reduced the work scope (temporary or permanent lay-offs and/or production reduction in general)	14.3%	11.7%	0.0%	17.3%	4.6%	4.1%
Focused on reduction of other operational costs	71.4%	42.2%	40.0%	39.4%	41.5%	71.2%

Source: Survey on the impact of crisis induced by the conflict in Ukraine on firms 2023.

5.3 The impact of the crisis on labor and other services

Labor costs increased mainly up to 50% compared to the year before (**Figure 13**). The burden of the soaring labor costs has been slightly higher on small than compared to larger firms, as well as among exporters. The latter may be due to the labor-market scarcity for medium skills, which have been likewise dragging the wages up. Sectorally, the scarcity of specific occupations is likely pronounced in construction, whereby cases of imported construction workers are known. The labor cost pressure has been the smallest in high-pay services, probably because the wage level there has been already very high.

Figure 13 – Labor cost change (2022 compared to 2021)

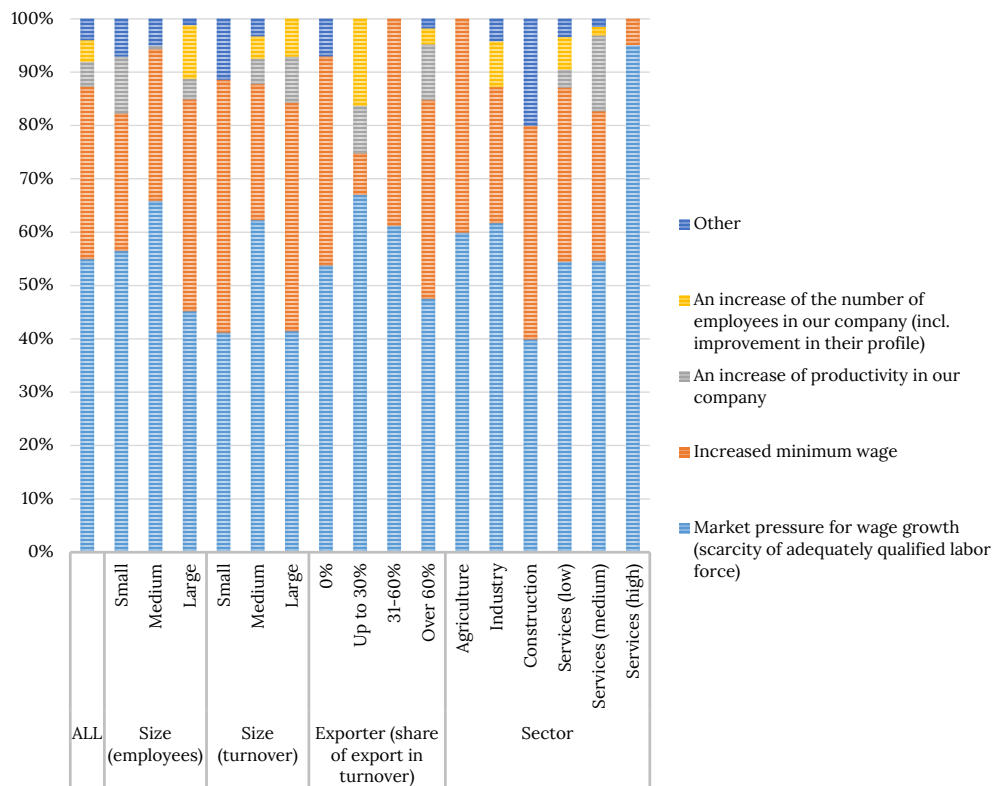


Source: Survey on the impact of crisis induced by the conflict in Ukraine on firms 2023.

That labor and skill scarcity may be driving the labor cost surge is observed through the notion that 55.1% of firms responded that the main reason for the labor cost increase is the market pressure (**Figure 14**). This pressure is highly reflected in medium-sized local firms of high-pay service profile. It is likely that most of the high-pay service firms are more frequently exposed to global developments, so that the wage increases there are driven by the market forces both domestically and globally. Yet, the minimum wage is

a significant presser of the labor cost, reported by 32.2% of firms. Small firms are hit most by the minimum wage increases, but the pressure onto the other firms is not strikingly smaller. Low-pay sectors like agriculture, construction and low-pay services (trade, transport, hotels) expectedly suffer most of the minimum wage hikes.

Figure 14 – The main reason for the labor cost increase



Source: Survey on the impact of crisis induced by the conflict in Ukraine on firms 2023.

Firms mostly did not react to the elevated labor costs (**Table 5**). This is reported by 35.8% of firms, but the reaction was strongest among small local firms – between half to three fourths reported so. The other two coping strategies have been those who we observed through the coping mechanisms within the other costs surge: transferring of the burden onto consumers through increasing own-product prices and cost consolidation. The other potential coping strategies for the labor costs included reduction of number of workers or hours, using government measure or outsourcing services or processes, but all these were selected by small number of firms. Interestingly, it is only large firms who opted for outsourcing of some processes, including through investing in software, AI etc. and these were usually in industry and construction.

Table 5 – Ways of coping with the increased labor costs

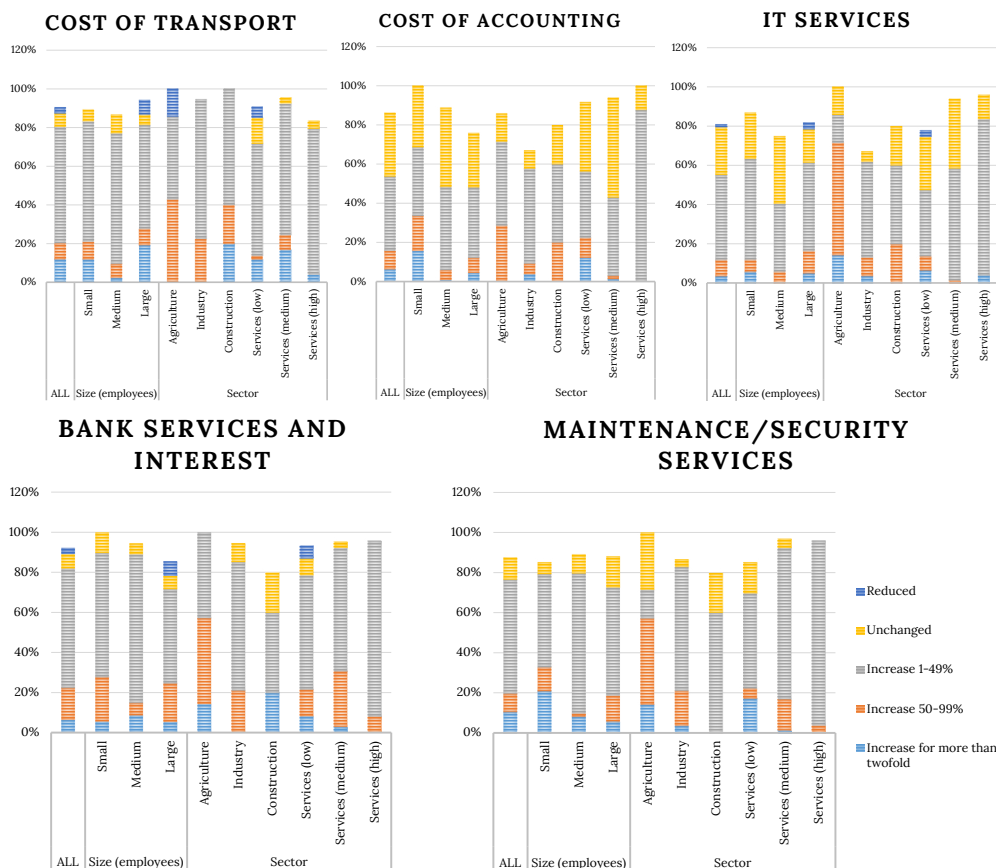
	ALL	Size (employees)			Size (turnover)			Exporter (share of export in turnover)			
		Small	Medium	Large	Small	Medium	Large	0%	Up to 30%	31-60%	Over 60%
No reaction, the budget line for these costs remained elevated	35.8%	52.7%	34.6%	26.2%	76.2%	28.3%	27.7%	43.5%	41.6%	14.2%	19.2%
Reduced the number of employees or cut the working hours	11.1%	13.9%	2.2%	15.8%	16.5%	7.9%	17.7%	10.6%	11.3%	44.2%	7.6%
Utilized government measures (e.g. active employment measures) to support the costs	7.0%	5.4%	4.0%	10.3%	8.9%	6.3%	8.0%	0.0%	2.4%	44.2%	19.3%
Outsourced some services which were performed in-house	7.4%	0.0%	10.7%	9.6%	0.0%	6.4%	17.7%	8.1%	7.8%	44.2%	1.1%
Outsourced some processes (incl. with investment in e.g. software, AI etc.)	11.1%	5.7%	2.5%	20.7%	9.4%	8.0%	23.5%	3.8%	17.7%	44.2%	16.3%
Increased prices of our products (outputs)	48.3%	33.8%	61.3%	47.8%	38.4%	51.5%	45.3%	47.2%	52.5%	57.9%	46.1%
Focused on reduction of other operational costs	39.7%	25.7%	41.1%	47.2%	18.8%	44.6%	40.0%	33.1%	29.5%	72.1%	55.5%
	Sector										
	Agri-cul-ture	Industry	Con-struction	Services (low)	Services (medium)	Services (high)					
No reaction, the budget line for these costs remained elevated	28.6%	30.4%	40.0%	42.9%	26.1%	12.4%					
Reduced the number of employees or cut the working hours	14.3%	15.6%	0.0%	16.7%	4.6%	4.1%					
Utilized government measures (e.g. active employment measures) to support the costs	14.3%	3.9%	0.0%	9.0%	3.1%	0.0%					
Outsourced some services which were performed in-house	0.0%	0.0%	0.0%	8.3%	1.5%	67.0%					
Outsourced some processes (incl. with investment in e.g. software, AI etc.)	14.3%	19.6%	20.0%	9.7%	4.6%	0.0%					
Increased prices of our products (outputs)	28.6%	50.0%	40.0%	57.7%	27.7%	75.3%					
Focused on reduction of other operational costs	42.9%	40.6%	40.0%	26.4%	55.4%	67.0%					

Source: Survey on the impact of crisis induced by the conflict in Ukraine on firms 2023.

5.4 Other costs, demand and the most pressing current challenges

The cost of other services firms use have been mainly on the rise, with varying yet considerably smaller degrees than the costs of the raw materials, energy and labor (**Figure 15**). The cost of transport for the firms increased mainly up to 50% in 2022 compared to 2021, the pressure being higher in agriculture, industry and construction. For a significant part of firms, the cost of accounting did not change (on average for a third of firms), but the share of those reporting an increase up to 50% is significant. The same holds true for the IT services, which soared only in agriculture. Bank services and interest marked large increases, usually up to 50%, but also non-negligible share of firms reporting increase of more than double. Again, such costs have been particularly pressing in agriculture. Maintenance and security service cost mainly increased in the same range up to 50%, but non-negligible share of firms reported that such cost remained unchanged.

Figure 15 – Cost increase of other services (2022 compared to 2021)

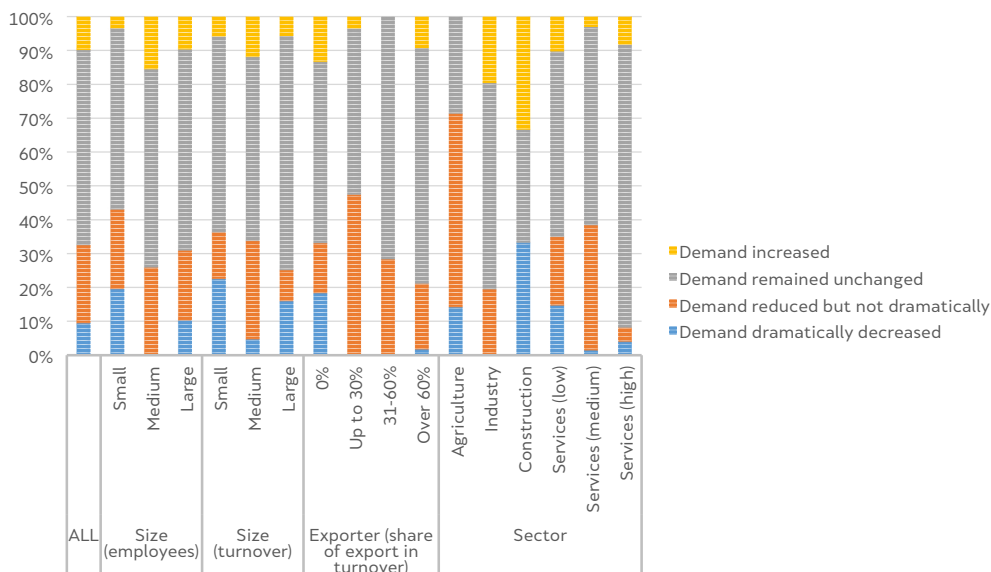


Source: Survey on the impact of crisis induced by the conflict in Ukraine on firms 2023.

With the invasion of Ukraine by the Russian Federation, the world economy faced an unprecedented supply shock. However, the rising uncertainty, declining real incomes and high costs likely depress demand, which feeds into recessionary patterns. The prospects for the growth globally and in many economies have dwindled; for example, in North Macedonia, the initial projection of 4% growth of GDP before the conflict in Ukraine halved over 2022 and indeed the entire year finished with 2.1%. The prospects for 2023 are equally gloomy: the projections fall in the 2-2.5% range, which is half the potential of the economy (estimated to hover around 4-4.5%).¹ The reaction of the central banks has been a gradual tightening, in order not to further depress the declining demand.

Still, for 57.6% of the Macedonian firms, demand remained intact (**Figure 16**), yet being higher for larger exporting firms in industry and high-pay services. Interestingly, a third of firms in construction reported demand increase, which may explain part of the surge in prices of real estate. The latter has been likely a coping mechanism of buyers against inflationary pressures and expectations. Yet, in some segments, the opposite is observed: a non-negligible share of firms reporting demand decline. This is the case more frequently for smaller firms, who are local in nature, usually in low-pay sectors like agriculture, trade, transport and hotels.

Figure 16 – Assessment of the demand for own products and services (2022 compared to 2021)



Source: Survey on the impact of crisis induced by the conflict in Ukraine on firms 2023.

¹Jovanovik and Kabashi (2011) estimate economy's potential between 2.4% and 3.6% for the period 1995-2009. 2010s have been a period of structural changes, particularly with the emergence of the free zones and the influx of MNCs. Own estimates suggest that presently the potential hovers above but close to 4%.

The general uncertainty related with the unclear moves of economic policies and the uncertainty in the economic environment surrounding the work of firms in North Macedonia are among the key three challenges they face currently, reported by 42.3% and 41.6% of firms, respectively (**Table 6**). Yet, none of the two is the problem number one, which is more structural in nature: the shortage of qualified labor force, reported by 55.3% of firms. We noted earlier that this likely pressed labor costs more than the other developments related to wages, like the minimum wage hikes.

There are apparent differences across firm types, though. For the small firms, the key problem is the economic uncertainty, followed by labor and skill shortages. The latter is the key and strongly pronounced problem for the medium-sized firms. But, for the large firms, this problem is equally weighted with the high prices of electricity and energy products. This is not surprising, given their high exposure onto volatile market conditions, i.e. they have not had any shield in this regard as have had households and small and medium-sized firms.

In agriculture, the high price of electricity is equally important as the high price of raw materials and input services (both reported by 71.4% of firms), which may have been driven by the soaring prices of fertilizers and other related inputs, directly determined by the conflict in Ukraine. Labor and skill shortages are a challenge for all respondents in industry, as well clearly with large shares in all other sectors. The latter relates with the needed semi- or high-skilled labor, which in the later decade was soaked by the inflowing MNCs in the free zones or subject to intense emigration. However, for the medium- and high-pay service sectors, the most important problem is the economic and policy uncertainty, while labor and skill shortages come third.

Table 6 – The three most pressing challenges presently

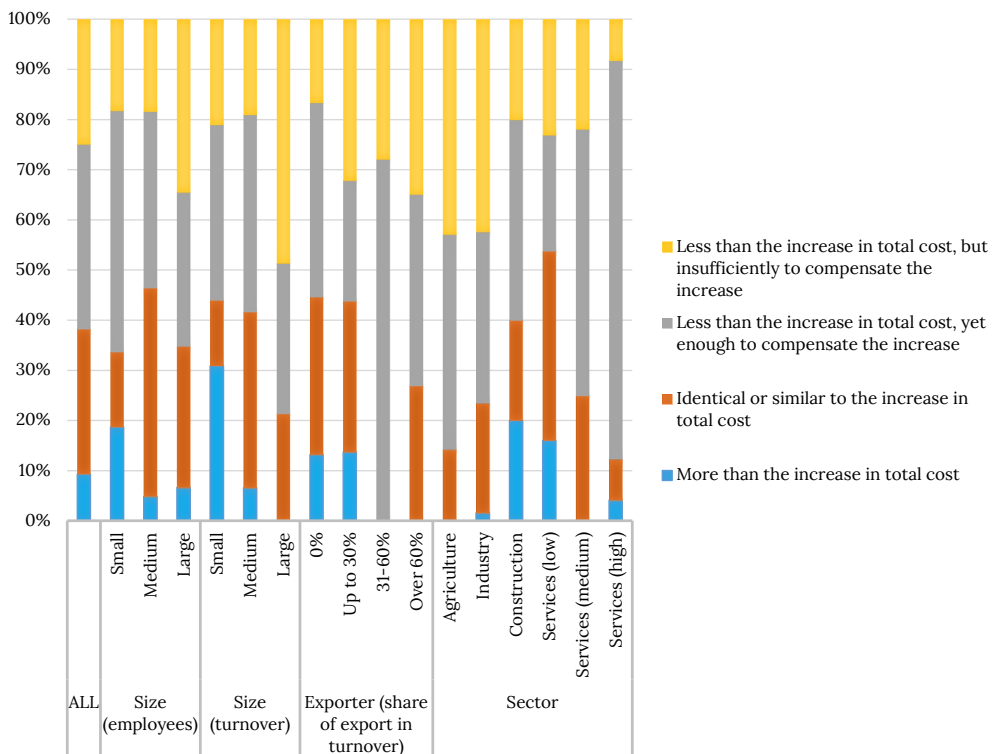
	ALL	Size (employees)			Sector					
		Small	Medium	Large	Agriculture	Industry	Construction	Services (low)	Services (medium)	Services (high)
High price of electricity and energy inputs	39.7%	32.9%	28.0%	52.3%	71.4%	67.2%	20.0%	45.2%	10.8%	16.5%
High price of raw materials and input services	24.2%	37.2%	16.9%	21.5%	71.4%	57.8%	0.0%	24.6%	10.8%	4.1%
Increased uncertainty in the economic environment	41.6%	50.9%	52.8%	27.8%	42.9%	27.4%	80.0%	26.0%	61.6%	83.5%
Shortage of qualified workers	55.3%	44.7%	71.7%	50.0%	28.6%	47.6%	100.0%	55.7%	46.1%	75.3%
High labor costs	28.0%	29.7%	29.0%	26.3%	14.3%	34.4%	40.0%	21.9%	36.9%	8.2%
Supply interruptions	5.4%	7.4%	0.0%	8.1%	14.3%	3.9%	0.0%	9.7%	0.0%	0.0%
Transport and logistics interruptions	3.4%	3.2%	0.0%	5.9%	0.0%	3.9%	0.0%	5.1%	3.1%	0.0%
Access to finance challenges	10.3%	18.3%	8.4%	6.9%	28.6%	7.8%	20.0%	8.3%	7.7%	4.1%
Uncertainty for and increased interest rates	8.6%	1.9%	25.5%	0.5%	0.0%	3.9%	0.0%	9.7%	16.9%	8.2%
Accumulated debt	6.5%	5.7%	4.5%	8.5%	0.0%	3.9%	0.0%	9.7%	0.0%	4.1%
General uncertainty (determined by the unclear moves of economic policies)	42.3%	43.8%	36.4%	45.7%	28.6%	27.4%	0.0%	37.6%	66.2%	79.4%

Source: Survey on the impact of crisis induced by the conflict in Ukraine on firms 2023.

5.5 Firms' specifics and the strength to withstand the crisis induced by the conflict in Ukraine

The general coping mechanism for the rising costs in Macedonian companies has been the transference of the burden onto final consumers of own products and services, i.e. through increasing their prices. This has been observed through the cost-by-cost analysis in the previous section. When asked about the extent to which the rising final prices resonate the increasing input costs, the responses vary (**Figure 17**). On average the responses are almost equally distributed among 'equal to the increase in total cost', 'less than the total cost increase, but enough to compensate' and 'less than the total cost increase, but insufficient to compensate'. Yet, there are differences within the segments we analyze. Small firms were more frequently abler to fully-fledge transfer the cost increase onto prices. Sectorally, this has been the case in construction and low-pay services, which says, for example that in trade and hotels, the input price surge was fully if not excessively reflected into the output prices. The opposite holds for large firms, in industry and agriculture, whereby large share of firms were unable to transfer the cost surge onto final process, i.e. the transferring was insufficiently effective.

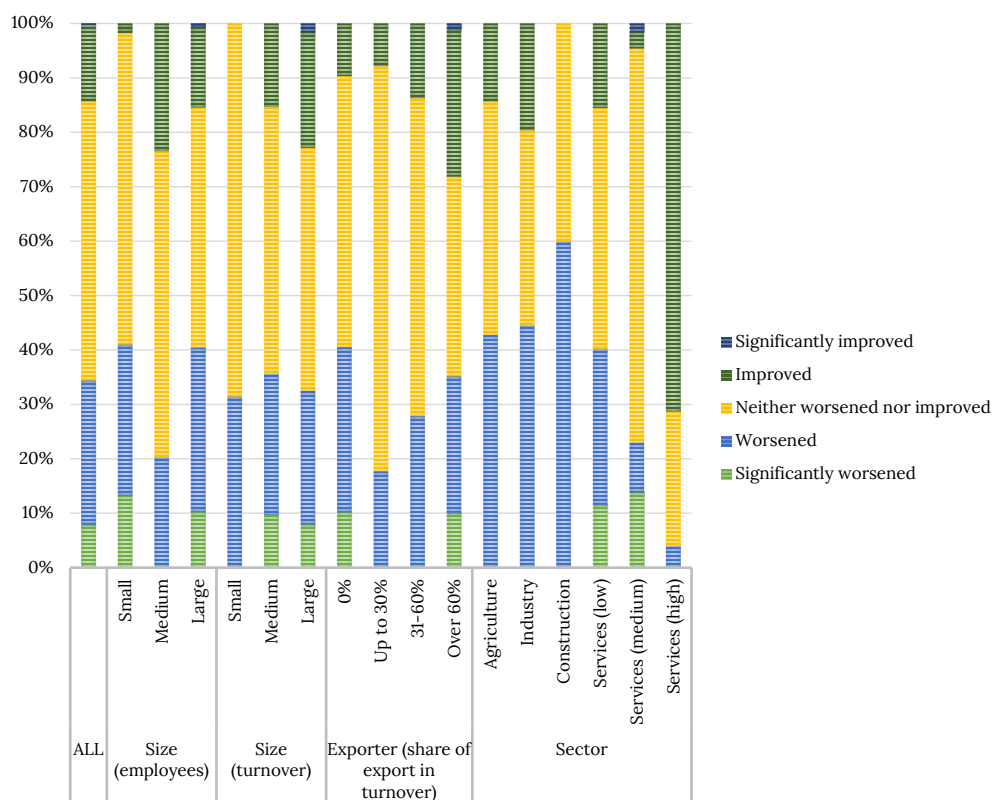
Figure 17 – The increase in prices compared to the increases in costs



Source: Survey on the impact of crisis induced by the conflict in Ukraine on firms 2023.

Cost and price structure in firms is determining their competitiveness on the market. The dramatic surge in input costs which then triggered to a significant or large extent conference onto the final prices of own products and services, during the current crisis induced by the conflict in Ukraine, likely affected firms' competitiveness. However, on average, half of the firms (51.3%) reported that their competitiveness has been neither harmed nor improved. For small local firms though, more than for medium-sized ones, the competitiveness worsened. This is the case for agriculture, industry and construction, despite a non-negligible share of firms in industry (19.6%) reported competitiveness enhancement. The higher the skill intensity in services, the lower the worsening of competitiveness perception, whereby in the high-pay services an astonishing 71.2% of firms reported their competitiveness improving.

Figure 18 – Perception on the changes in own-firm competitiveness



Source: Survey on the impact of crisis induced by the conflict in Ukraine on firms 2023.

In the final part, we calculate how the probability of the costs' surge being transferred onto final prices and of competitiveness changes depend on certain characteristics of the firm. Results are presented in **Table 7**: we do not present the marginal effects due to space, and hence we provide interpretation only in general sense. First, we need to note that many of the coefficients are not significant, which *inter alia* may reflect the relatively small sample amid the large number of variables used. However, there are some significant variables, on which we put our attention.

Only high-pay services note a significant improvement of competitiveness given the developments around the crisis induced by the conflict in Ukraine. This is expected as they faced a surge in global demand, which affected their competitiveness. This resonates the fact the significance in the table is also observed on the medium-sized firms, which noted improvement in competitiveness compared to small-sized firms. As observed earlier, large firms less so than small firms transferred the input cost surge onto final prices to a significant or full extent.

Regionally, firms in Polog, Southwest and Southeast regions were less able compared to firms in Skopje to transfer input cost increase onto prices. It could be that these regions more frequently nest low-pay low-competitive firms, whose market power is feeble to result in a full-fledge transfer of the cost onto prices. However, in terms of competitiveness, firms in the Southwest region faced a competitiveness decline, while those in Southeast region a competitiveness increase compared to those in the Skopje region. Some further and more important insights follow in the second part of the table. The higher the energy cost share in total costs, the more input costs were transferred onto final price, but the more worsening the competitiveness. Labor cost share did not matter for the cost transference nor for competitiveness, which may resonate the fact that the labor cost surge was primarily driven by market forces. When firms faced higher demand for their products during this crisis, this was more frequently associated with improving competitiveness. When firms did not undertake any step to cope with the surging cost, this did not correlate with the way they conferred rising costs onto prices nor with competitiveness, yet with the exception of the labor costs. Note that the share of firms who did not undertake step to cope with the labor cost surge was significantly higher than the shares related to the other two cost groups. The significant coefficient suggests that firms who did not undertake step to cope with the increasing labor cost were less frequently able to convert the surging input costs into higher final prices.

Table 7 – The probability of cost transferring onto prices and of competitiveness worsening

		Final price reflecting input cost (from more to less)	Competitiveness perception (from worsening to improvement)
Sector (Agriculture is reference category)	Industry	-0.2438	-0.1555
		(0.669)	(0.624)
	Construction	0.0948	-0.0536
		(0.838)	(0.696)
	Low-pay services	-0.6726	-0.1262
		(0.625)	(0.602)
	Medium-pay services	-0.2379	-0.3058
	(0.642)	(0.659)	
	High-pay services	0.1821	1.5090**
		(0.659)	(0.763)
Size (Small firms are reference category)	Medium-sized	0.2213	0.7056*
		(0.523)	(0.418)
	Large	1.0930**	0.2095
		(0.525)	(0.562)
Region (Skopje is the reference category)	Polog	0.7832*	0.8537
		(0.451)	(0.546)
	SW	2.3808*	-0.7122*
		(1.320)	(0.382)
	Pelagonia	-0.119	-0.5519
		(0.478)	(0.464)
	NE	0.394	-0.6432
		(1.321)	(0.721)
	E	-0.4939	0.4345
		(0.442)	(0.508)
	SE	1.2807*	1.0589*
		(0.675)	(0.583)
Vardar	-0.3675	-0.1459	
	(0.723)	(0.906)	

Exporting, share in turnover (Non-exporters are the reference category)	1-30%	-0.2984	0.8151**
		(0.470)	(0.413)
	31-60%	0.5088	0.887
		(0.412)	(0.549)
	Over 60%	0.0621	0.4012
	(0.278)	(0.523)	
Energy cost share		-0.0275***	-0.0123*
		(0.009)	(0.007)
Labor cost share		0.0044	-0.0019
		(0.008)	(0.007)
Demand (from reduction to increase)		-0.2378	0.5974**
		(0.211)	(0.250)
Firms who did not undertake any step for coping with raw material price surge		-0.4517	0.0585
		(0.537)	(0.370)
Firms who did not undertake any step for coping with energy price surge		0.3706	0.0196
		(0.469)	(0.491)
Firms who did not undertake any step for coping with labor cost surge		0.7499*	0.075
		(0.438)	(0.332)
	Observations	92	94

Source: Author's calculations.

*, ** and *** refer to a statistical significance at the 10%, 5% and 1% level, respectively. Standard errors provided in parentheses. Standard errors robust to heteroscedasticity. Weights accordingly used.

6. CONCLUSIONS AND RECOMMENDATIONS

The objective of this study has been to assess the impact of the crisis induced by the conflict in Ukraine on firms in North Macedonia. We relied on the Survey on the impact of the crisis induced by the conflict in Ukraine on firms executed over 112 firms of various profiles during April and May 2023. The raw data have been analyzed through descriptive statistics and a probit regression.

Our results suggest that despite the share of the costs for raw materials are larger in the cost structure for the larger industrial exporters, it is more frequently the small firms in the agriculture and low-pay services who suffered more from their price increases. Firms of all sizes decided to transfer the price pressure onto their final products, while large firms more frequently undertook cost-reduction strategy than smaller firms. Firms of all sizes postponed some planned investment to cope with the surge in the raw material prices, while the share of those who stopped production, despite small, has been mainly concentrated among agricultural firms.

Macedonian firms mainly rely on electricity as an energy input into their production processes. Large firms, who purchase electricity on the open market, have seen energy cost surge in the range exceeding doubling and frequently quintupling, particularly in industry and construction. High-pay services saw more bearable energy cost increases. While the transmission of the energy price shock onto own product prices and cost consolidation has been observed among all firms, yet there have been other coping strategies. For example, medium and large firms embarked on investment in facilities for own production of electricity, as well reorganized processes to reduce energy consumption. This has been the case most frequently in industry, followed by agriculture and low-pay services. While, small firms more frequently did not undertake any coping strategy, which may be a reflection of them operating on a regulated electricity market and hence being shielded by the government.

Labor costs increased for Macedonian firms mainly as a result of the market pressure generated due to the labor and skill scarcity, followed by the pressure exerted by the minimum wage hikes. The latter has been particularly important for small local firms in the low-pay sectors. The latter more frequently did not cope with such pressure in any meaningful manner, just transmitted the rising cost onto consumers of their products and services. It was only large companies in industry and construction who responded with outsourcing of some processes through purchases of software AI etc. The rest of the costs that companies realize like accounting

services, IT, bank interest and commissions, maintenance and security services etc. increased in the range between 1% and 50%, despite a non-negligible share of firms reported that some of the costs related to such services did not increase, while a significant increase was noted only in agriculture.

The demand for the products and services of the Macedonian companies mainly remained unchanged over 2022. However, for some segments, like the large firms in industry and construction, the demand increased, while for others, like smaller local firms in agriculture, the demand rather reduced.

Still, on average, a before-existing structural problem, mainly unrelated to the crisis induced by the conflict in Ukraine, is the key challenge firms face: shortage of qualified labor force. This is still followed by the economic and policy uncertainty of the working environment. Labor and skill shortages are more pronounced for small and medium-sized firms, as well in construction, while uncertainties are more frequently reflected by larger and high-paying firms. For the large firms, the electricity price solely market determined are clearly the most striking problem.

Regression results reveal that the higher the energy cost share in total costs, the more input costs were transferred onto final price, but the more worsening the competitiveness. When firms faced higher demand for their products during this crisis, this was more frequently associated with improving competitiveness. When firms did not undertake any step to cope with the surging cost, this did not correlate with the way they conferred rising costs onto prices nor with competitiveness. Labor costs are an exception. While labor cost share did not matter for the cost transference nor for competitiveness, firms who did not undertake step to cope the increasing labor cost were less frequently able to convert the surging input costs into higher final prices. Indirectly, this signifies that if labor cost is pushed by increase of e.g. the minimum wage, then a cost-push inflation will not result only if firms decide to soak up the increase at the expense of their profits.

The following is a set of recommendations the stem out from the above conclusions.

- Economic and policy uncertainty is high and is likely to remain so for a protracted period of time, despite gradually fading out and/or providing room for accommodation. Still, the key recommendation for the government in this respect is to avoid abrupt policy moves and involve in substantive consultative processes related to all intended regulatory changes and policy moves, with all relevant stakeholders (chambers of commerce, civil society, academia, expert community, etc.). The consultations should take place at the initial stage, before decisions on particular economic policy moves are being made by the government. Then, it is critical that sufficient amount of time is provided for ramification and time allocation for a change to take effect. This is particularly relevant for any policy in the area of tax and finance, as many companies apply a multiyear budgeting and sudden and unexpected changes may cause firm-level and market distortions.
- The shortage of labor and skills remains critical hurdle on the market even amidst the crisis induced by the conflict in Ukraine. While the government attempted to provide a relief to the issue through considering import of labor, such a policy move may distort a market with rising wages and idle labor. The primary response to the situation may lie in real activation of the registered unemployed labor force, through offering palette of measures for activation, including reskilling and upskilling, accompanied with cut of social and informal support like guaranteed minimum income and income earned in the shadow economy. Another line of consideration in this regard is to flexibilize the approach towards the possibility to employ full-time students in secondary and tertiary education.
- As the critical issue for large firms has been the price of electricity, as they purchase it on the open market, it is indispensable to consider a model which will support these firms in times of excessive market volatility. The straightforward answer – or request by firms – is usually to obtain fixed (guaranteed) price by the government, or tax reliefs, which is for them plausible but may be fiscally unsustainable. Instead, large firms and the government may enter negotiations to consider a model which will shield them not from the eventually high price levels, but rather from their excessive volatility. The model may involve purchase (guaranteeing) electricity price at fixed rate for extended period of time, i.e. including periods when the market price is below the fixed price.
- A longer-term alternative for the larger companies is to intensively invest in capacities for production of own electricity, a wave that has started and was evident in the survey. Then, the objective of the government policy (including municipal governments) would be to

streamline and simplify all the necessary procedures to the simplest possible level, so that these investments produce rapid shield and gain. Moreover, the government-supported approach towards installing own capacities for electricity production should be popularized through publishing guidelines for the process of obtaining permits and installing own electricity-production capacities. In addition, the consultancy support already available within the Development Bank should be likewise popularized.

- As facilities for own production of electricity may rapidly proliferate, it is critical to understand the capacity of the current electricity transmission network to sustain new plugins/connections, particularly in the short run, and to work towards upgrade of such capacity. Alternatively, the acute issue is to support the investment in and technical installation of electricity-storing capacities (batteries) for preventing that a large share of produced electricity from newly-installed capacities is wasted.
- While the financing mechanisms for both firms and households for investment in own capacities for electricity production have been expanding lately, supplementing them with opportunities potentially supported by state aid may provide an indispensable incentive. For example, the Ministry of Economy already supports energy-efficient investment primarily for households, which may expand in the direction of firms, like for example, support in purchasing energy-efficient machines and equipment and in building energy efficient buildings and halls (something which in the survey showed yet unutilized by firms) or support in purchasing cutting-edge equipment for storing own-produced electricity.
- Clear communication of the measures/mechanisms offered through the Development Bank is critical, as many firms remain uninformed of the steps and processes related to the specific measures, including unpredictability of when a call may be published and the amount of effort it may require for the submission of the documents.

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