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The impact of inflation on SMEs: Evidence from a survey on Greek SMEs

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Abstract

Based on Kalecki's theory of the dichotomy of market structure we focus on the different impacts of inflation on firms with asymmetric market power. Using a questionnaire survey, we measure the impact of the recent inflationary crisis on Greek SMEs' performance and the strategies they adopted to survive. Our results indicate a dualism regarding the impact of inflation, between small and large firms and between exporting and non-exporting firms. Our findings suggest that high inflation reinforces market concentration trends, leading to an increase in regional disparities.

Keywords: SMEs, Inflation, Price setting, Market power, Kalecki

Ο αντίκτυπος του πληθωρισμού στις ΜΜΕ: Αποτελέσματα μίας έρευνας σε ελληνικές ΜΜΕ

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Περίληψη

Βασιζόμενοι στη θεωρία του Kalecki για τη διχοτόμηση της δομής της αγοράς, εστιάζουμε στις διαφορετικές επιπτώσεις του πληθωρισμού σε επιχειρήσεις με ασύμμετρη ισχύ στην αγορά. Μέσω μιας έρευνας ερωτηματολογίου, μελετάμε τον αντίκτυπο της πρόσφατης πληθωριστικής κρίσης στις επιδόσεις των ελληνικών ΜΜΕ και τις στρατηγικές που υιοθέτησαν για να επιβιώσουν. Τα αποτελέσματά μας δείχνουν έναν δυϊσμό στην επίδραση του πληθωρισμού, κυρίως μεταξύ των μικρών και των μεγάλων επιχειρήσεων και μεταξύ των επιχειρήσεων με εξαγωγικό και μη εξαγωγικό προσανατολισμό. Τα ευρήματά μας υποδηλώνουν ότι σε περιόδους υψηλού πληθωρισμού, ενισχύονται οι τάσεις συγκέντρωσης της αγοράς οδηγώντας σε περαιτέρω αύξηση των περιφερειακών ανισοτήτων.

Λέξεις κλειδιά: ΜΜΕ, πληθωρισμός, καθορισμός τιμών, δύναμη αγοράς, Καλέτσκι

1. Introduction

During the second semester of 2021, at a time when the global economy began to recover from the COVID-19 crisis, inflation greatly escalated. Following the disruption of supply chains due to the pandemic, as governments started to lift the restrictions, aggregate demand recovered creating a temporary supply gap and price increases (Harding, Linde and Trabandt 2022). Expansionary fiscal policies by governments to support firms and workers further increased inflationary pressures (Makin and Layton 2021) and - in early 2022 - Russia's invasion of Ukraine caused further disruptions in the supply of energy resources. As a result, the global economy faced an inflationary wave analogous to the oil and energy crisis of the 1970s.

Economists are divided over whether the current inflationary shock is temporary or not. While most agree that double-digit inflation will not be sustained for an extended period, no one can say exactly what the long-term effects will be. Several economists have argued that inflationary pressures will be temporary, that international transfers will gradually be restored, that capacity utilisation will rise and that central banks will succeed in keeping long-term inflation expectations low (Krugman 2021, Reifenschneider and Wilcox 2022, Ilzetzki 2022, Arman-tier et al. 2022). Others have argued that there is a real risk of entering a new era of persistently higher inflation than in recent decades (Seiler 2022, D'Acunto and Weber 2022, Summers 2021, Ghosh 2022).

In any case, given that the recent inflationary shock was mainly supply-driven, most firms had to walk on a tightrope between absorbing increased costs and/or transferring these costs to their consumers. But this decision has to do with the firm's characteristics. As Kalecki (1971) suggested, there is a strong dichotomy between firms with different levels of market power. By extension, this dichotomy could lead to different survival strategies in a high-inflation environment.

Our study aims to investigate this inflationary impact on SMEs of different sizes, internationalization dynamics and position on the value chain. We specifically focus on Greek SMEs which is of great interest since Greece is a small, developed peripheral economy, mainly comprised of small size and low efficiency firms¹. Greek firms have faced multiple crises during the last 15 years. Following the debt crisis of 2009, the pandemic lockdowns and the inflation crisis wave put additional stress on SMEs (Giakoulas 2021, 2023).

The case of Greece has important implications for the EU as a whole since SMEs make up 99% of firms within the EU. They are responsible for two-thirds of jobs in the private sector and contribute to over half of the total value added generated by firms in the EU. The Commission has put in place a comprehensive

¹ This study was based on a survey implemented by the Small Enterprises Institute of the Hellenic Confederation of Professionals Craftsmen and Merchants (IME GSEVEE). The survey was implemented in the context of the Project "GSEVEE's Interventions for the Systematic Monitoring and Forecasting of Changes in the Productive and Business Environment of SMEs (MIS 5003864)" - Operational Programme «Competitiveness, Entrepreneurship, Innovation» which is Co-financed by Greece and the European Union.

framework for policy instruments aiming to bring the “Think Small First” principle into effect, emphasizing that SMEs are essential for the delivery of stronger, lasting growth and more and better jobs and for revitalizing the European economy. The importance of SMEs for the economy of the EU is also reflected in a series of Commission initiatives for empowering SMEs such as the SBA, EEN and COSME (European Parliament 2023).

The recent inflationary wave in the EU has had a negative impact on businesses, with some disproportionate effects on SMEs. Inflation initially reduced the profitability of SMEs, as production costs increased, and SMEs were less likely to pass costs than large firms. This led to a decline in EU SMEs added value by 2.3% in 2022 and given that inflation also led to an increase in interest rates, SMEs also face a reduced access to finance (Di Bella et al. 2023).

2. SMEs contribution to EU’s regional development

As far as European SMEs are concerned, several studies have highlighted the importance of SMEs for regional development. SMEs can help to diversify the economy and reduce dependence on a single industry or sector (Glonti et al. 2021), they mainly use local resources and tend to reinvest their profits locally. This can lead to the creation of new jobs and the development of local infrastructure. In addition, SMEs increase market competition and have a significant antitrust effect, which can lead to innovation and better products and services (Mrvaa and Stachová 2014). Small firms tend to be more flexible and engage in adaptive innovation. Additionally, small firms often provide the first jobs for many people (Floyd and McManus 2005). As Symeonidis (1996) suggested, in some industries smaller firms tend to have a higher levels of innovations per employee than larger firms. Therefore, they can stimulate growth by focusing on innovation and exploiting technological opportunities in their respective industries. Similarly, Pagano and Schivardi (2003) and Silveira (2022) found that although there is a positive relationship between firm size and growth, small and young firms play an important role in experimenting and introducing new products. Moreover, as Batrancea (2022) found, the intensive trading activities of SMEs in the European Union have contributed to an increase in the rate of venture capital investment. In short, EU SMEs are an important source of entrepreneurial skills and innovation and contribute to economic and social cohesion, which is why SMEs are seen as critical to the future of Europe, and why EU Cohesion Policy is the largest policy source of funding for SMEs in Europe. Furthermore, SMEs are crucial for the implementation of the EU’s Smart Specialization Strategies (McCann & Ortega-Argilés 2015) which link new technologies and activities to a wide range of sectors and activities.

European SMEs have also increased their presence in international markets through export activities, which has had a positive impact on the level of economic growth. As noted by Batrancea (2022), the intense trading activities of SMEs in the European Union, as well as increasing exports outside the EU, have contributed to an increase in the rate of venture capital investment.

3. The impact of inflation on small firms

Conventional wisdom holds that inflationary periods have a positive impact on firms' profitability (see, for example, Bhutta and Hasan 2013, Lee and Rask 1976, Marcus 1969, Adaora 2013, Osinowo 2015). Nevertheless, several studies find a negative correlation between inflation and firms' profits (for example, McDonald 1999, Chaudhry et al. 2013, Loto 2012, Siyakiya 2014, Bans et al. 2016) but there is no agreement on the magnitude of this effect. In addition, Fischer (2013) examined the relationship between inflation uncertainty and investment for small firms and found that inflation uncertainty decreases investment. Similarly, Chi Zhang et al. (2021), found that firm behaviour differs by size; during periods of high inflation large firms increase their investment expenditure more than SMEs whose access to finance is further constrained by rising interest rates (see also Dayi 2020, Pabuçcu and Ayan 2017 and Ulusoy 2008).

Our consistent view is that the impact of inflation on firms is not horizontal. It depends on the type of product produced by the firm, the structure of the market, the strength of its 'brand' and its size. According to Kalecki (1971), modern economies are characterised by a strong dichotomy. On the one hand, there is a "core" consisting of monopolistically or oligopolistically structured product markets where prices are controlled by firms. On the other hand, there is a 'periphery', which operates more competitively and acts as a shock absorber to the benefit of the monopoly sector. The periphery consists of firms with low market power, limited ability to introduce new technologies, longer payback periods and lower margins. In short, competition exists at the periphery but not at the core of the economic structure.

If this is the case, when inflation occurs, firms in the 'core' can raise prices and further increase their profit margins. However, this puts pressure on small firms in the periphery, which face higher production costs but cannot raise their prices because they operate in more competitive markets. This hypothesis is supported empirically, as several studies find a positive correlation between the survival risk of SMEs and high inflation (Kristanti et al. 2019, Liu and Wilson 2002). Brand power also seems to play a role. Price increases can damage a firm's reputation (Luca & Reshef 2021), but Campbell (1999) showed that the impact on the firm's demand for goods is smaller when a price increase is perceived as "fair" (justified) by consumers. Moreover, firms with a good reputation are less likely to engage in a speculative race (Cabral and Xu 2021). Finally, firms providing basic goods/services are expected to be less affected by inflation due to inelastic demand. Conversely, firms producing goods/services characterised by higher elasticity are expected to be negatively affected due to the shift in demand towards basic goods. In addition, inflation has implications for the type of goods sold and the structure of the market. Carlton (1982) argues that the uncertainty created by inflation reduces long-term contracts and hence the security they provide. It also reduces expenditure on non-standard (customised) goods/inputs and increases the pressure to internalise production at the expense of outsourcing. This affects SMEs firstly by limiting access to specialised inputs (a necessary condition for ensuring their competitiveness) and secondly, because only larger firms can internalise parts of the production chain.

Nevertheless factor affecting a firm's exposure to inflation is the amount of working capital required (Dayi 2020). Small trading firms are disproportionately affected as they need to hold more liquid assets than other firms. On the other hand, firms with high inventories tend to benefit from inflation due to the appreciation of their inventories (Dayi 2020). In contrast, smaller firms face rising inventory replacement costs. The administrative costs of adjusting selling prices, the increase in the cost of transport and maintenance of means of transport, and the possible reduction in the productive effort of the workforce due to a fall in real wages are factors that affect small firms in particular (Briault 1992). Inflation also affects the effective corporate tax rate. Green (1984) found that although inflation reduces the effective tax rate for all firms, the reduction appears to be more significant for larger firms. In addition, Meyer (1954) argued that inflation leads to a redistribution of income from wage earners to employers. Since wages are paid after work is done, employees become creditors of their employers. Extending this rationale to intra-firm transactions means that firms producing intermediate goods are more exposed to inflationary pressures. Finally, in normal times, price changes provide a "signal" - triggered by changes in relative prices - that guides resource allocation decisions. High inflation makes it difficult to read these signals (Briault 1992). Uncertainty about the future level of prices hampers investment decisions, especially when the return on capital takes a long time.

4. The diverging experience from the recent inflation shock in Europe

The recent surge in inflation has put a significant strain on the European Union, which is heavily dependent on Russian energy resources (Flanagan et al. 2022). This has resulted in inflation rates exceeding 10% in Eurozone countries in the autumn of 2022, according to Eurostat (2022). The persistence of inflation has already affected financial markets, as they anticipate its continuation, thereby contributing to a self-fulfilling prophecy. Inflation has also begun to affect other facets of the economy, including interest rates and exchange rates, and there is a potential risk of a housing market crisis emerging (Adrian 2022).

The inflation crisis also had a strong impact on the divergence of national inflation rates within the EU and the Eurozone (see Table A1 – Annex)². The Baltic countries and the Central and Eastern European EU countries experienced extremely high inflation rates compared to the EU average (Figure A1 – Annex). This is a rather important issue for the EU's integration process, since while high inflation rates increase inequality within countries (Thalassinos et al. 2012), divergent inflation rates increase inequality between countries, as shown in a compilation of relevant papers by the European Parliament (2022), and practically nullify common monetary policies.

As for Greece, from its entry into the euro area until the debt crisis, inflation fluctuated between 3% and 3.5%, gradually declining after 2011 and turning into

² All annexes for this article can be freely accessed on the journal's website.

deflation from 2013, falling to -2% in 2015. During the subsequent period of lean economic recovery (2016-2019), inflation returned to positive levels, fluctuating below 1%. During the pandemic, Greece again faced deflation and after the gradual lifting of restrictive measures in 2021, inflation started to escalate as a result of the recovery in demand and rising costs due to supply chain disruptions. Inflation reached 12.1% in June 2022 with: a level not seen in the Greek economy since the first half of the 1990s. There has been little discussion of the causes of the recent surge in inflation in Greece. However, two studies by Pierros and Theodoropoulou (2022) and Ioannidis (2023) come to similar conclusions. According to Pierros and Theodoropoulou (2022), the Greek inflation rate was mainly driven by energy inflation since in September 2022 more than half of headline inflation was due to inflation in energy products. They argue that the divergence of energy costs from the Eurozone average can be attributed to the high dependence of the Greek economy on imported commodities and energy, the relative energy dependence of Greek firms, and above all to the oligopolistic structure of the energy market. Already, since 2021, Greece had the third highest share of distribution costs in the retail price of gas among the EU member states and in the first half of 2022 Greek gas suppliers maintained the second highest mark-up in the EU. In the first half of 2022 Greece recorded exceptionally high electricity prices, before taxes and levies for both residential and non-residential consumers. The picture improves considerably when taxes, levies and allowances are taken into account but for the non-residential consumers, the post-tax price remained the second highest in the EU.

The analysis of Ioannidis (2023) comes to similar results. He points out that in July 2022 the general import index in Greece had increased by 67.6% compared to 46.2% in the Eurozone. In all individual sub-categories (non-consumer goods, consumer durables, capital goods) the increases were 2 to 3 times higher than in the Eurozone. Analysing the changes in the individual sub-categories, he estimates that in the period July 2021-August 2022 about 68% of inflation can be attributed to the increase in energy prices. Second, he argues that there are strong indications that energy suppliers have used rising production and import costs to increase the markup on the final consumer price. The difference between the producer and consumer prices increased across the EU, but in the case of Greece, the increase was six times higher than in the euro area (producer costs in Greece increased by 37.9% compared to 35.2% in the euro area but the final price of energy increased by 52.8% compared to 37.6% in the euro area). On this basis he estimates that about 25% of the increase in energy prices is due to the increase in the markup of the energy supplier companies operating in Greece.

Most worryingly, the above developments are unfolding in an environment characterized by a strong dualism between micro and larger firms (Aranitou et al. 2022). This dualism has been present at least since the late 1990s due to broader changes in the productive structure of the economy (Ioannidis 2012), but it was further triggered by the long recession of 2008-2015. In 2020, micro firms in Greece concentrated a smaller share of employment and turnover than in 2008, while on the contrary, larger firms (more than 50 employees) concentrated a

much higher share (similar results are provided by IME GSEVEE's 2023 annual report on SMEs as well as by Piraeus Bank reports (GREC 2022)). In view of the above, the Greek SMEs faced an asymmetric shock due to the rising prices. As shown in Table 1, energy price increases in Greece are much higher than in the rest of the Eurozone, especially in those consumption segments where the majority of firms and households are concentrated. Needless to say, the situation described above creates a stressing environment for Greek SMEs given that the structure of the Greek economy is characterized by a high concentration of small firms (European Commission 2023) and that the economy has not yet fully recovered from the 2009 debt crisis which led to a significant loss of its GDP by 26% and a growth divergence from the rest of the EU member states (Giakoulas et al. 2019).

Table 1: Change in average price of energy (in PPP) per size of consumption, 2020S2 -2021S2

	Consumption bracket	Eurozone	Greece	V*
Natural Gas				
Households				
D1	Up to 20 GJ	10%	42%	8.1%
D2	From 20 GJ to 200 GJ	13%	96%	72.3%
D3	More than 200 GJ	22%	132%	19.6%
Enterprises				
I1	Up to 1.000 GJ	23%	138%	7.9%
I2	from 1.000 GJ to 10.000 GJ	25%	168%	10.2%
I3	from 10.000 GJ to 100.000 GJ	45%	134%	46.2%
I4	from 100.000 GJ to 1.000 000 GJ	88%	154%	35.7%
Electricity				
Households				
DA	Up to 1.000 kWh	-4%	13%	3.7%
DB	from 1.000 kWh to 2.500 kWh	7%	17%	17.2%
DC	from 2.500 kWh to 5.000 kWh	9%	20%	40.0%
DD	from 5.000 kWh to 15.000 kWh	10%	29%	35.0%
DE	More than 15.000 kWh	7%	29%	4.0%
Enterprises [nrg_pc_205]				
IA	from 20 MWh	3%	48%	7.3%**
IB	from 20 MWh to 500 MWh	10%	66%	18.9%**
IC	from 500 MWh to 2.000 MWh	15%	111%	8.7%**
ID	from 2.000 MWh to 20.000 MWh	23%	113%	20.9%**
IE	from 20.000 MWh to 70.000 MWh	32%	89%	8.9%**
*: average (2020-2021) ratio of category to total consumption. **: the total sums to 64.7% meaning that the rest 35.3% concerns consumptions over 70.000 MWh. Nevertheless, Eurostat does not provide values for Greece in this consumption bracket.				

Source: Ioannidis, 2023

5. Methodology and demographics

The survey was conducted by the Small Enterprises Institute of the Hellenic Confederation of Professionals Craftsmen and Merchants (IME GSEVEE) and took place from 28.9.2022 to 12.10.2022. We followed a random, non-stratified sample selection by distributing an online questionnaire through social media and collected responses from 135 Greek firms. The questionnaire included (mainly categorical) questions about the firms' demographics, performance, cost structure, the impact of recent inflation and strategies to deal with it (see questionnaire in Annex 2).

The main objective of the survey was to investigate the impact of inflation on firms and examine the strategies adopted to deal with the phenomenon. Table A2 (Annex) shows the basic demographic data of the enterprises that participated in the survey. It should be noted that only 46.7% of the surveyed firms are located in medium- or large urban centres, while 53.3% are located in areas with less than 100.000 inhabitants. As such, this survey is the first that we are aware of that captures the impact of inflation on firms operating in small communities.

The firms included in our sample are mainly concentrated in the service sector and secondarily in the manufacturing sector. They tend to be located in small towns and settlements and most of them have been in operation for more than a decade. They are run by middle-aged or older people with a higher level of education than the average business owner. Finally, in terms of size, they tend to be small firms since 61.5% of them employ up to 9 workers. On the basis of the above, we have analysed the responses to (a) size, (b) "age" of the enterprise, (c) location (large urban centre or settlement), (d) whether they produce only final goods or not and (e) whether they export or not (Table A3 - in the Annex).

6. Results of the survey

6.1 Impact of inflation on SMEs

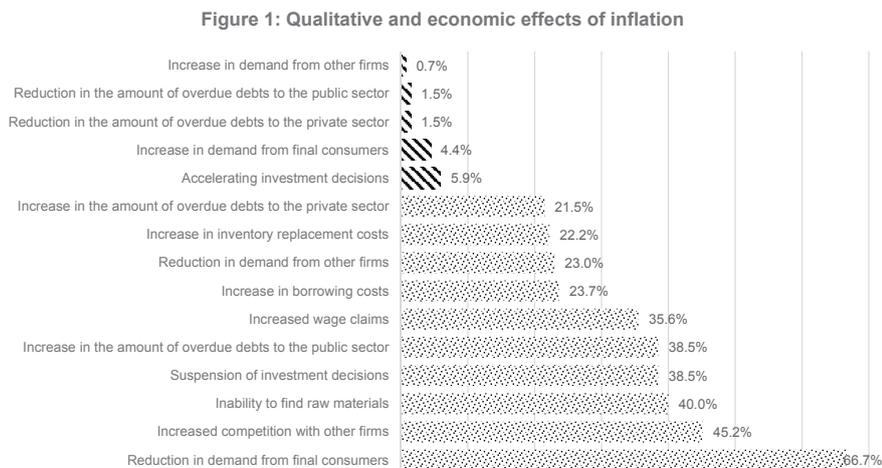
Regarding the impact of inflation, we find a negative one: 67% of firms consider the impact of inflation to be negative, 6.7% neutral and only 0.7% positive. In this respect, our findings are consistent with those of McDonald (1999), Chaudhry et al. (2013), Loto (2012), Siyakiya (2014) and Bans et al. (2016). In terms of their medium-term investment plans, we find a negative impact. More than half of the firms that planned to make new investments within the next five years reported that had suspended their implementation due to inflation. Thus, our results confirm the findings of Fischer (2013) and Chi Zhang et al. (2021), as SMEs' investment plans are negatively affected by inflation. The average increase in total operating costs of the sampled firms was estimated at 19.3%, excluding increases in salaries and other costs.³

³ The firms in our survey have an average payroll cost of 15.4% of turnover, raw materials 22.7%, energy and transport 18.1%, rent 9% and other costs 15%. Due to the inflation, there was an average increase of energy costs by 42%, transport costs by 27% (other than energy), raw materials and other inputs by 27.3% and rent by 7.6%.

We then asked the participant firms to select the six most important effects (both negative and positive) of inflation (Figure 1). We find that the majority of responses focus on negative effects like the reduced demand from final consumers (67%), increased competition, the inability to find raw materials, postponement of investment decisions, increased debt to the public sector and increased wage demands from employees (35% to 45%). Finally, around 20% stated that they had experienced increased borrowing costs, reduced demand from other firms, increased costs of replacing stock and increased indebtedness to the private sector. Only 5.9% stated that inflation has accelerated investment decisions and 4.4% that it has increased demand.

Firms were also quite pessimistic about their future turnover. In total, 45% of the firms consider it very likely that they will cease operations in the following year⁴ and about 4 out of the 10 firms (41.5%) expect a decrease in turnover in 2022 despite the strong growth rates of the economy. From the analysis of the questionnaire, three factors emerge that are highly correlated with firms' turnover expectations: (a) size, since medium-sized firms (turnover over 500.000 €) have higher positive and lower negative expectations than micro firms (turnover up to 100.000 €), (b) source of revenue's, as firms whose turnover is mainly derived from the sale of final product have more negative expectations compared to firms whose revenues partly derive from intermediate product sales (47.4% vs. 25% respectively) and (c) export orientation as 60,9% of exporting firms expect an increase in turnover compared to 36.4% of non-exporting firms, while 21.7% of exporting firms expect a decrease in turnover compared to 46.6% of non-exporting firms.

Figure 1: Qualitative and economic effects of inflation



⁴ In Annex 3, we examine the correlation between the size of firms, in terms of turnover and employment, and their perceived risk of closure during the inflationary crisis. Our results indicate a strong positive correlation between the size of the firm and its survival expectations.

In brief, our main findings on the impact of inflation on the sampled firms can be summarized as follows:

(a) The share of firms with negative expectations is quite high. This is particularly worrying considering that 2022 was a year of strong growth for Greece mainly due to the economic recovery after the COVID-19 recession of 2021. Moreover, size matters since micro-firms have higher negative and lower positive expectations than medium-sized firms. In this context, and to the extent that the negative expectations are confirmed, we should expect a further reduction in entrepreneurial pluralism, at least in terms of firm size.

(b) The fact that firms operating in small regions have higher rates of pessimistic expectations implies a widening of regional and intra-regional disparities. In large urban centers, the decline of smaller firms and the strengthening of larger ones have mainly redistributive effects. On the other hand, the decline of small firms in small urban or semi-urban areas is usually associated with the abandonment of productive activities and therefore has a negative impact on the growth potential of these areas.

(c) Even if the negative expectations of firms are not confirmed, i.e., if firms' responses are disproportionately influenced by current developments (context bias), the high share of negative expectations affects investment decisions and thus widens inequalities between firms. Therefore, high levels of negative expectations are an objective problem regardless of whether the expectations are fulfilled.

(d) The export orientation of firms is the most important factor in differentiating positive and negative expectations. Therefore, policies to support internationalization are crucial but it should not be forgotten that in many activities exports are not feasible. In this respect, internationalization policy is important, but it cannot exhaust the policy for supporting SMEs.

6.2 Strategies for dealing with inflation.

When it comes to strategies adopted to deal with the inflationary shock our research questions were threefold. To estimate the extent of price increases, to analyze other strategies (apart from price increases) and finally to document the firms' opinion on the effectiveness of the strategy adopted.

As far as price increases are concerned, about 74% of the firms in our survey stated that they increased their prices in 2022, while only 16% kept their prices stable. For 2/3 of the firms that increased prices, the increase was not planned but imposed by the economic situation. The average price increase for all firms was estimated at 14.8%.

Interestingly, the percentage of firms that kept prices stable is significantly higher among those that sell almost exclusively final goods (17.3% compared to 15.6% of the average) and among those that do not export (22.2% compared to 15.6% of the average). Similarly, the price increases of these firms tend to be lower than those of exporting firms and suppliers (sellers of intermediate goods and services). This indicates the limited market power of domestically oriented firms.

The majority of firms (around 75%) have had to absorb part of the increase in production costs. About half of them (54.1%) had to absorb up to 20% of the increased production costs, while only 15.6% managed to pass on all cost increases to third parties. As these firms are very small, this means that inflation has a direct negative impact on the incomes of entrepreneurs and their households. Again, exporters and suppliers are in a better position in the sense that they were able to pass on a larger part of the increased costs to their customers (17.3% and 25% respectively). This confirms Kalecki's (1971) hypothesis on the market power of "core" firms and their ability to control prices.

Given the persistent dynamics of the inflationary phenomenon, it is possible that the price increases will not be the last ones: 69% of firms intend to raise prices again during the next six months. According to the responses to our questionnaire, new price increases are more likely to occur in "younger" firms (up to 10 years of operation) located in large urban centers, with higher turnover, selling intermediate goods, and that are export-oriented. The analysis did not reveal any significant differences in the size of future price increases. This suggests a high likelihood of spill-over of the inflationary effect into the following year.

In the remainder of our survey, we focus on the strategies adopted by firms to cope with the inflationary shock apart from price increases (Table 2). The responses fall into four broad categories. The first category corresponds to responses that appear with a very high frequency (over 30%). These include efforts to manage materials/inventories more efficiently, to save energy by reducing the use of equipment and lighting and efforts to improve labour productivity. The second category includes responses with a high frequency (20% to 29.9%). This group includes strategies such as saving energy by investing in less energy-intensive equipment/lighting, expanding the business into new areas and/or markets, delaying payment of debts to the government, reducing quantities, changing suppliers, and trying to diversify raw materials. The third category includes responses with a moderate frequency (10% to 19.9%). It includes strategies such as delaying payment of debts to the private sector, introducing new cheaper products into the product range and reducing staff. According to the survey, 17% of firms reduced staff in 2022 of which only 5.2% said that this reduction was not linked to the economic situation. In any case, it should be noted that 27.4% of firms increased their staff. The net effect on employment was therefore positive. Finally, the fourth category includes responses that occur with low frequency (up to 10% of the responses). These include the internalization of processes that had previously been outsourced, the renegotiation of payment contracts with partner firms, the introduction of premium products into the firm's product range and finally the sale of fixed assets.

As a result, the overall picture is ambiguous. On the one hand, most companies have adopted strategies that will not harm their growth prospects in the medium to long term. Indeed, some of the strategies may have a lasting positive impact, such as, managing materials more efficiently, improving labour productivity,

investing to reduce energy consumption, or trying to expand their activities into new markets. Similarly, the sale of fixed assets that could damage the medium- to long-term prospects of the firm is the least frequent choice. On the other hand, “band-aids” with negative long-term effects are just as frequent. 27.4% of firms delayed repayment of debts to the State, 19.3% delayed the payment of debts to other firms and 25.2% reduced the quantity of product per package. The introduction of new, higher quality (premium) products is also limited.

Nevertheless, it should be noted that in some cases there are significant differences in the responses of firms according to their type.

Exporting firms are more likely to focus on increasing the efficiency of their inventory management, improving labour productivity in combination with staff reductions, expanding into new markets and internalizing operations. Similarly, they are less likely to favor reducing quantities, changing suppliers, and delaying payment of debts to individuals. None of the exporting firms have chosen to renegotiate payment contracts with their counterparts.

Larger firms tend to focus on expanding into new markets, reducing staff, internalizing operations, and renegotiating payment contracts with partner firms. In contrast, they do not seem to favor energy savings by reducing the use of equipment and lighting, reducing the quantity per package and switching suppliers. Nor did any of them choose to introduce new premium products.

Firms that sell intermediate goods have put more emphasis on more efficient inventory management and on introducing new cheaper products into their product range, apparently adapting to the increased demand for cheaper inputs. On the contrary, they have some of the lowest rates of late payment of debt to the public sector.

New firms show higher rates of energy saving by investing in less energy-intensive equipment, delaying the payment of debts to the public and private sectors, reducing the quantity per product package, changing suppliers, and expanding the product range by introducing both new cheaper and higher quality (premium) products. None of them reported that they had renegotiated payment contracts with the cooperating companies.

Firms operating in large cities (over 100,000 inhabitants) show a higher frequency of expansion into new areas/markets.

Finally, smaller firms (up to 100,000 € turnover) show higher rates of delayed payments to the public sector and the introduction of new premium products.

Finally, regardless of the strategies adopted, we investigate the firms' assessment of the effectiveness of each strategy. The results are presented in Table A4 (Annex). The main finding is that with the exception of efforts to improve labour productivity and investment in less energy-intensive equipment, all of the response strategies were rated as having low effectiveness. Better inventory management and expansion into new areas/markets are the next two most effective strategies. However, there is a large discrepancy between those firms that consider the first four strategies to be the most effective and those that ul-

Table 2: Other strategies adopted by firms to cope with inflation

Type of strategy	Total enterprises	Important variations
Improved materials/inventory management	43.0%	47.2% in firms producing intermediate goods 69.6% in export oriented firms
Saving energy by reducing the use of equipment and lighting.	42.2%	26.9% in large firms
Improve labour productivity	37.8%	56.5% in export oriented firms
Saving energy through investment in less energy-intensive equipment/lighting.	29.6%	36.1% in new firms
Expansion of activities into new fields and markets	27.4%	34.9% in firms located in large cities 34.6% in large firms 47.8% in export oriented firms
Delayed payment of debts to the public sector	27.4%	36.1% in new firms 34.3% in small firms 22.2% in firms producing intermediate goods
Reduction of quantities	25.2%	33.3% in new firms 15.4% in large firms 13% in export oriented firms
Change of suppliers	23.7%	27.8% in new firms 15.4% in large firms 13% in export oriented firms
Diversification of raw materials.	20.7%	There are no significant differences by category of firms.
Delayed payment of debts to the private sector	19.3%	30.6% in new firms 13% in export oriented firms
Introduction of new cheaper products	17.0%	25.0% in new firms 61.1% in firms producing intermediate goods 0% in firms producing final goods
Staff reduction	11.9%	19.2% in large firms 17.4% in export oriented firms
Internalisation of functions	8.9%	19.2% in large firms 21.7% in export oriented firms
Renegotiation of payment contracts with partner companies	5.9%	7.7% in large firms 0% in new firms 0% in export oriented firms
Introduction of premium products	5.2%	13.9% in new firms 8.6% in small firms 0% in large firms
Sale of fixed assets	4.4%	There are no significant differences by category of firms.

timately choose them. Around one in two firms did not adopt the strategy they considered most effective. The other side of the coin is the strategies that firms know that they are not effective but are forced to adopt. This category includes delaying payments to the government, reducing quantities per unit of product and changing suppliers.

7. Conclusions and policy implications

Conventional economic wisdom holds that the redistributive effects of inflation are transitory, but as far as economic policy is concerned the crucial question is what happens in the interim period until the “correction” occurs. Economic crises are transient, but that does not make the social and economic effects of a recession any less important.

A less studied effect of high and prolonged inflation is that it alters the market structure to the benefit of larger firms. By analogy with what happens to households, the impact of inflation on firms varies according to their size. Large firms with monopoly-type market power can raise prices without significant loss of market share, and they tend to increase their profits during periods of high inflation. In contrast, the main impact of inflation on smaller firms is an increase in production costs without the ability to pass these costs on to consumers, as small firms tend to operate in more crowded and therefore more competitive markets.

Our survey showed a clear size dualism on the impact of inflation on firms' expectations but also on the strategies adopted. We found that larger firms, export-oriented firms, firms selling intermediate goods/services and firms located in large cities have the greatest potential to manipulate prices and thus pass on increased costs to their domestic or foreign customers. This leads to a strengthening of their market position over the smaller firms and furthermore to an increase in income inequalities and interregional disparities. On the one hand, according to press reports (Kathimerini 04.10.2022), the profitability of Greek listed companies reached record levels in the first half of 2022.⁵ On the other hand, 41.5% of the companies surveyed said that they expect their turnover to decline in 2022. This rises to 51.4% for the smallest firms in the sample.

We have seen that inflation, and in particular inflation differentials, create disparities within and between countries and render any common monetary policy ineffective. We discussed the contribution of dynamic small firms on regional development. Given that many peripheral European economies such as Greece have historically based their development model on a panspermia of small firms, we deduce that inflation, persistent or not, puts pressure on those small firms and by extension to the development prospects of the economies. From the above, we conclude that in times of crisis, the very process of European integration itself is at risk.

⁵ According to Kathimerini (4.10.2022), the net profits of listed companies in the first half of 2022 amounted to €5.46 billion, more than double the profits of the whole of the previous year (€2.5 billion) and up 333.5% compared to the first half of 2021.

In this respect, there is an urgent need to develop a multi-faceted strategy to protect SMEs from the negative effects of inflationary crisis. We need specific instruments and policies at both European and national level to alleviate the costs of inflation for small firms and to counterbalance the growing power imbalances vis-à-vis larger firms that lead to oligopolistic market environments. Such policies should promote fair competition and market access between firms, and specifically support small firms in their access to finance, digitalisation and innovation capacity.

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