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EXCESSIVE COST-PUSH INFLATION IN GREECE: THE ROLE OF MARKET POWER

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ABSTRACT

The rise in unit profits has been a major contributor to price inflation across the euro area in the post-pandemic period. A widely cited explanation in the literature attributes this trend to post-pandemic supply bottlenecks, which temporarily allowed firms in key sectors to exercise market power, thereby increasing profit margins. An additional argument posits that the degree of competition in these sectors plays a structural role in shaping and driving unit profit growth. The present study empirically tests that hypothesis, using Greece as a case study—an economy within the euro area that saw particularly sharp increases in prices and unit profits during the post-pandemic years. To this end, annual panel data from Greece's economic sectors covering the period 2017–2023 are used. The econometric analysis confirms this hypothesis, indicating that the market power, proxied by sectoral concentration rates, has been a significant determinant of profit and inflation dynamics in the period under consideration.

JEL classification: D4; E31; E52; C23.

Keywords: profit margins; inflation; market structure; monetary policy; panel data estimations.

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1. Introduction

Inflation has stayed high across the euro area in the post-pandemic period, despite weak growth. Initially, this was driven by external supply shocks: post-pandemic supply chain disruptions, geopolitical shocks, like the war in Ukraine, energy price spikes, and extreme weather events that led to food disruptions. Ongoing geopolitical crises and climate related disruptions suggest that further exogenous supply shocks are likely, with adverse effects on both inflation and growth. From a macroeconomic policy perspective, it is then crucial for monetary and fiscal authorities to identify and analyze domestic inflation drivers.

In the post-pandemic years 2021 and 2022, rising unit profits emerged as a major domestic contributor to inflation in the euro area (Arce et al., 2023; OECD, 2023; Hahn, 2023; Papageorgiou and Rizos, 2024; Sideris and Pavlou, 2024). The initial surge in prices was largely driven by exogenous factors (elevated energy costs and supply chain bottlenecks) and a rebound in demand, fueled by government support measures and accumulated household savings during the pandemic. In response, firms increased prices to preserve or expand profit margins — at times beyond what rising energy costs justified—particularly in key sectors that temporarily gained market power. The increase in unit profits and prices in these sectors was then transmitted in the rest of the economy through the production chains.

This increase in profit margins may have reduced the effectiveness of monetary policy in managing inflation and stabilizing output (Eeckhout, 2022; Duval et al., 2021; Akcigit et al., 2021). ECB officials, including President Lagarde, have emphasized this challenge (Lagarde, 2023; Lane, 2023; Panetta, 2023; Schnabel, 2022), noting that unexpected profit-driven inflation has complicated policy transmission and may require interest rates to remain elevated for an extended period. In addition, the faster rise in unit profits relative to wages signals growing inequality, as the share of income accruing to capital increases at the expense of the labor share. This effect is crucial for the social conditions of an economy, so it becomes of high importance for policymakers when planning social policies. In addition, the redistribution of income from labor to capital may have broader macroeconomic implications: Such a shift may exert contractionary effects on aggregate demand, given that the propensity to consume out of wages is higher than that out of profits (Nikiforos and Grothe, 2023; Sideris and Pavlou, 2021).

A prevalent explanation in the literature suggests that the rise in profit margins primarily reflects firms' exercise of market power, as they took advantage of supply disruptions and the resulting uncertainty to increase prices (see Capolongo et al., 2023; Weber and Wasner, 2023; Junk and Hayes, 2023; Stiglitz and Regmi, 2022; OECD, 2023; Sideris and Pavlou, 2024).¹ The argument is not that corporate profits were the main driver of inflation or/and that dominant firms are to blame for the supply shock, but that corporations' market power exacerbated the supply shocks effects on prices.

In highly competitive sectors, firms have limited ability to increase profits. In less competitive sectors, producers can sell their goods at prices above their marginal costs by applying a markup. The extent to which they can maintain these higher prices depends on the degree of market power they hold.² Each sector is typically governed by different regulations and is characterized by distinct concentration ratios, which constitute indicators of the degree of market power of the dominant firms in the sector. The argument of the present analysis posits that the degree of market power within specific sectors plays a more structural and persistent role in shaping and driving the growth of unit profits and consequently prices, beyond the temporary effects of supply disruptions. According to this view, dominant firms operating in more concentrated markets are better positioned to set prices above marginal costs, allowing them to maintain elevated profit margins regardless of short-term shocks. Such views are provided by several studies, which apply a sectoral analysis to indicate the importance of profit margins on inflation (see e.g. Weber and Wasner, 2023; Hansen et al., 2023; Arce et al., 2023; Barnard and Olivaud, OECD, 2023; Naberneegg et al., 2024; Arquie and Malte, 2024; Davis, 2024).

The present study empirically estimates the relationship between market power, as approximated by market concentration, and unit profits at a sectoral level.³ It uses

¹ This analysis aligns with Blanchard's assertion of conflict inflation, that "inflation is fundamentally the outcome of the distributional conflict between firms, workers, and taxpayers" (Blanchard, 2022).

² Recent studies document a steady increase in firms' market power since the 1980s (see, inter alia, De Loecker and Eeckhout, 2017) and this has attracted the interest of macroeconomists. Changes in aggregate market power have broad macroeconomic implications, as they can influence firms' pricing behavior, the labor share of income, investment levels, productivity growth and the natural interest rate, ultimately affecting the effectiveness of monetary policy (Diez et al., 2018; IMF, 2019). The increase in market power may even lead to weak worker bargaining power (IMF, 2019), whereas firms with high market power are able to suppress wages (Akcigit et al, 2021).

³ Sideris and Pavlou (2024) provide evidence that unit profits are formed by market power as indicated by the competition conditions in the product markets of the euro area countries, in the post-pandemic era. Their analysis is performed at an economy wide level, whereas the present analysis examines this hypothesis at a sectoral level.

Greek data, as Greece presents a particularly relevant case study: it is among the euro area economies that experienced some of the most pronounced increases in prices and unit profits during the post-pandemic period (see also Sideris and Pavlou, 2024). In particular, in 2022, the HICP surged by 9% in Greece, compared to 8.4% in the euro area, whereas the GDP deflator rose by 6.3% compared to 5.3% in the euro area. It should also be noted that during the inflationary surge of 2021–2023, 77% of the average GDP deflator inflation was driven by unit profits. The present study examines whether profit increases were systematically associated with market concentration across Greek sectors in the period 2017 - 2023. This timeframe represents the post-crisis normalization phase for the Greek economy. It follows an era of restrictive fiscal policies that sharply suppressed demand, alongside extensive structural reforms implemented under the three consecutive economic adjustment programs that liberalized the institutional framework of the labor and product markets. Consequently, the analyzed period captures an economic recovery cycle characterized by robust GDP growth rates and a gradual resurgence in domestic demand, in an assumingly competitive product market framework. The aim is to assess whether market power played a significant and enduring role in shaping inflation — an insight with substantial implications for economic policy.

The study analyses the sectors that are expected to operate under free market conditions and are typically analyzed in the relevant comparable studies.⁴ The eleven main sectors of the Greek economy under consideration, are: the professional services sector, manufacturing, the information and communication sector, construction, the accommodation and food activities sector, agriculture, the transportation and storage sector, the real estate sector, energy, the trade sector and the quarrying and mining sector. These sectors, with the exception of those of energy and mining and quarrying, registered significant average growth rates during the period under consideration and can be considered to be the driving forces of the Greek economy. Their growth rates also indicate increasing demand, potentially giving sellers more room to adjust prices.

⁴ The sectors which are exempted from the analysis are (i) the financial and insurance activities sector and (ii) the other services sector. The financial and insurance sector is typically excluded from comparable analyses, because of the sector's distinct accounting and reporting standards, which limit comparability with non-financial firms (Grothe, 2025). The other services sector is excluded because it comprises sectors with substantial public sector involvement—namely public administration, education, health, and social work,—and therefore are also commonly excluded from comparable analyses, as they are not expected to operate under competitive market conditions.

In addition, most of these expanding sectors are tradable, and their price fluctuations influence their competitiveness. Therefore, examining the dynamics of their price-formation mechanisms is essential for generating policy insights related to their competitiveness.

In the empirical analysis, the standard decomposition of the gross value-added deflators is initially applied to quantify the contribution of their components—profits, labor costs, and taxes—to inflation dynamics. To evaluate the relationship between unit profits and sectoral market concentration, we estimate a variety of alternative model specifications by applying several panel estimation techniques in an effort to enhance the robustness of our empirical findings. It is shown that the degree of concentration has been a key determinant of the increase in unit profits observed across the Greek sectors during the period under review.

The remainder of the paper is structured as follows: Section 2 provides a brief review of the emerging literature on the effects of unit profits on inflation, analyzed at a sectoral basis. Section 3 outlines the core model used to analyze the determinants of profit margins. Section 4 presents the data, constructs the key variables, and compares their evolution across the sectors. Section 5 presents the model specifications tested, outlines the econometric methodologies applied and offers a discussion of the empirical findings. The final section summarizes the findings and provides relevant policy implications.

2. Literature review

A growing body of recent research explores how corporate profits and market power have influenced post-pandemic inflation. Blanchard (2022) views inflation as a distributional conflict between firms, workers, and taxpayers, best addressed through coordinated wage–price agreements. Stiglitz and Regmi (2022) attribute recent inflation mainly to supply shocks, amplified by market power in certain sectors. Hansen et al. (2023) indicate that rising corporate profits accounted for nearly half of the inflation increase in Europe in 2021–2022, as firms raised prices beyond cost increases. Hahn (2023) and Colonna et al. (2023) show that profits can rise even with constant markups when costs shift disproportionately between inputs. Capolongo et al. (2023) link profit surges to pricing power, supply shocks, uncertainty, and strong post-pandemic demand. Weber and Wasner (2023) and OECD (2023) emphasize the role of

firms with market power, in driving and amplifying inflation. Hayes and Jung (2022) stress that profit–wage dynamics reflect bargaining power; weak wage growth allows higher profit capture. Jung and Hayes (2023) identify multiple mechanisms for “excess profits”, including passing on energy costs amid strong demand, temporary monopoly conditions from supply bottlenecks, natural monopolies, and entrenched market power. Sideris and Pavlou (2024) provide evidence that unit profits are formed by market power as indicated by the competition conditions in the product markets of the euro area countries, in the post-pandemic era. Overall, research consistently finds that market power and rising profits have been significant contributors to post-pandemic inflation, both by directly increasing prices and by shaping the distribution of gains between firms and workers. Policy proposals focus on coordinated wage–price setting, tighter monetary policy, profit taxation, stronger competition enforcement, and targeted price controls in key sectors.

Within this area of research, a growing body of literature focuses on a sectoral analysis of the role of profit margins on inflation. Weber and Wasner (2023) argue that the post-pandemic inflation episode derives from microeconomic origins, namely the ability of firms with market power in significant sectors, as the energy sector, to increase prices. They argue that rising prices in key sectors provide an impulse for further increases. This upward pressure is then amplified in all sectors and this eventually leads to wages responses. Wildauer et al. (2023) build a sectoral model of conflict inflation to study the post-pandemic inflation episode and the different patterns of profit shares in the sectors of energy, goods and services in the US. They indicate that the energy price shocks allowed the energy firms to increase both their profit margins and profit shares, while in non-energy firms only profit shares increased. As a result, inflation was not only driven by energy prices but also by increasing markups. The increase in markups is shaped by the relative pricing power of firms between sectors as well as the relative strength of labor and capital within sectors, and lead to redistribution in favor of the capital share. Davis (2024) documents the evolution of markups among listed U.S. non-financial firms in 2020–2022 and shows that firms’ market power allowed them to maintain – and, for some firms, increase – their margins over direct costs in the face of input cost shocks. Nikiforos et al. (2024) use Compustat data for publicly traded companies around the world and show that firms were able to maintain or to increase markups, although there is heterogeneity across sectors.

Several sectoral studies refer to the euro area and the main euro area countries. Hansen et al (2023) demonstrate that rising corporate profits, which do not necessarily reflect a rise in firms' profitability, played the largest role on inflation's acceleration, in the euro area over 2021 - 2022. They indicate that there exists, though, heterogeneity in the different sectors: unit profits increased mainly in the mining, energy and utilities sector, agriculture, manufacturing and construction⁵. Arce et al (2023) provide evidence that unit profits contributed more than unit labor costs to euro area inflation in 2022, particularly in the sectors of energy and utilities, agriculture, manufacturing and construction. Barnard and Olivaud (2023) indicate heterogeneous unit profit rises across different sectors in thirteen European economies, with the highest increases observed in mining, utilities and energy, manufacturing and services. OECD (2023) reports that firms which have high market power or operate in non-tradable sectors are more likely to be able to increase prices.

At a country level: Nabernegg et al. (2024) examine price developments in various sectors in Germany and how the additional revenues from price increases are distributed between capital and labor. Results suggest that the rises in prices and unit profits in the post-pandemic years were heterogeneous across sectors with particularly high levels registered in energy, agriculture and construction. Most of the inflation was associated with company profits in the high inflation sectors, evidence indicating that the inflation benefited capital owners at the expense of workers. Arquíe and Malte (2024) explore how, in the French manufacturing sector, producer prices vary with market power. They provide empirical evidence in favor of a role for firms' market power in explaining inflation (in line with Weber and Wasner, 2023): in less competitive sectors, firms could use the energy price hike to increase their prices more than warranted by actual changes in costs. Uxo et al. (2024) examine Spain's inflation in the post-pandemic era, focusing on income distribution, markups, real wages, and policy responses, using a conflict theory of inflation perspective. They indicate that firms raised markups, and the main driver of price increases has been the pass-through of higher input costs to maintain profits.

⁵ The outcome for the energy and agricultural sectors was largely anticipated, as initial price hikes in these sectors were driven by supply chain disruptions, which created uncertainty around energy and food prices.

3. Market power, inflation and the domestic components of inflation

3.1 The variables

The role of domestic factors on price formation is typically analyzed in the national account framework exploiting the GDP accounting identity from the income side (see, for instance, Hansen et al., 2023; Arce et al., 2023; Hahn, 2023; OECD, 2023; Sideris and Pavlou, 2024). On a sectoral analysis, the income-side approach shows how the gross value added (GVA) of each sector is distributed among the different participants in the production process. GVA is defined as the sum of the gross operating surplus and mixed income, compensation of employees and net taxes (taxes on production and imports less subsidies on production):

$$GVA = \text{Gross Oper. Surplus} + \text{Mixed income} + \text{Compensation of Employees} + \text{Net Taxes} \quad (1)$$

Gross operating surplus is the surplus (or deficit) on production activities before account has been taken of the interest, rents or charges paid or received for the use of assets. Mixed income is the remuneration for the work carried out by the owner of an unincorporated enterprise. National accounts define nominal profits as gross operating surplus and mixed income, so (1) becomes:

$$GVA = \text{Profits} + \text{Compensation of Employees} + \text{Net Taxes} \quad (2)$$

From (2) it follows that changes in the Gross Value Added deflator (nominal GVA divided by real GVA, GVA_r) are reflected to profits per unit of real GVA (unit profits), compensation of employees per unit of real GVA (unit labour cost), and taxes on production net of subsidies per unit of real GVA (unit taxes):

$$\frac{GVA}{GVA_r} = \text{GVA Deflator} = \text{Unit Profits} + \text{Unit Labour Cost} + \text{Unit Taxes} \quad (3)$$

3.2 Data set

The data set consists of annual observations for the period 2017-2023 across the eleven sectors of economic activity in Greece, i.e the professional services, manufacturing, the information and communication sector, construction, the hospitality-related services (accommodation and food activities) sector, agriculture, the transportation and storage sector, the real estate sector, energy, the mining and quarrying sector and the wholesale and retail trade sector. Altogether, these eleven sectors account for over 72% of Greece's economic activity (GVA) on average, during the period under review. The source of macroeconomic data necessary for the calculation of the variables

of interest (the unit profits, the unit labor costs and the unit taxes) are obtained from the ELSTAT National Accounts (NA) database.

The concentration index CR10 measures the proportion of total turnover accounted for by the ten largest enterprises within each sector of the Greek economy.⁶ It is calculated using data from the ICAP database. The dataset provides information on annual balance sheets and profit and loss accounts at firm level, as well as data on the sector of economic activity to which each firm belongs. We delete the consolidated accounts of company groups, preferring to work with individual firms that make up the group. In this way, it is easier to assign firms to a particular industry.

3.3 Economic growth across the sectors

The analysis examines the recovery period 2017-2023, following the crisis years, during which Greece experienced an unprecedented recession marked by a cumulative 24% decline in real Gross Value Added (GVA). The recovery was briefly interrupted in 2020 by the exogenous supply shock of the COVID-19 pandemic. Notably, the economy rebounded quickly from the pandemic-induced downturn and returned to strong growth thereafter, with GDP growth rates exceeding 8% and 5% in the post-pandemic years 2021 and 2022, respectively as shown in Figure 1. However, this recovery coincided with global supply chain disruptions, rising energy prices and broader inflationary trends across the eurozone. Consumer price inflation in Greece peaked at over 9% in 2022, the highest in decades, mainly driven by imported energy and food costs.

During the period under consideration, GDP grew at an average annual rate of 1.7%. Sectoral developments over this period point to eight sectors as the most dynamic: high annual growth rates, exceeding the overall economic average, were recorded in professional services, manufacturing, construction, information and communication, the hospitality-related activities, agriculture, real estate, and transportation and storage (Figure 2). This growth likely signals also increasing demand, potentially giving sellers more room to adjust prices. As such, it is interesting to analyze the pricing mechanisms in these sectors.

⁶ Two alternative concentration indices have been also calculated, CR4 and CR8 defined as the share of turnover attributed to the largest four and eight enterprises in total turnover of each sector of the Greek economy, respectively. Analysis using these indices provides similar results.

In addition, six out of these eight sectors – the professional activities sector, manufacturing, the information and communication sector, the hospitality services sector, agriculture and the transportation and storage sector- are tradable, meaning that their price movements directly and immediately influence their international price competitiveness. Moreover, all six sectors have shown notable improvements in export performance. Together, they constitute the most competitive segments of the economy and are central to the transition toward an export-oriented growth model (see Pavlou and Sideris, 2026). Analyzing price-formation mechanisms in these sectors is therefore essential for drawing meaningful policy conclusions regarding the evolution of their price competitiveness and their export performance.

3.4 Concentration and competition conditions across sectors

Market concentration is used as an indicator of both market structure and the degree of market power within a sector. When only a few firms control a large share of activity and supply, they gain the ability to shape and influence prices in that sector. The analyzed period follows an era of significant structural interventions that reshaped sectoral competition dynamics. These changes were driven by product and service market liberalization reforms adopted from 2010 onwards in the context of Greece's three economic adjustment programs (European Commission 2010, 2012, 2015). Measures were especially agreed on the energy, information and communication, transportation, and professional services (scientific and technical activities) sectors.

Figure 3 presents the CR10 index for 2017 and 2023, highlighting changes in concentration over the period examined. The index shows little variation in most sectors. It declined in seven out of the eleven sectors analyzed: energy, mining and quarrying, real estate services, information and communication, agriculture, professional activities and construction and remained stable or increased in the rest of the sectors (manufacturing, the hospitality-related services, wholesale and retail trade, and transportation and storage activities).

Concentration is high in energy, mining and quarrying, real estate, manufacturing, and information and communication: in these five sectors the ten largest firms account

for more than 60% of activity in 2023. This level of concentration is particularly notable given the large number of firms operating within each sector.⁷

Actually, oligopolistic conditions and strategies violating competition have been observed in (a) energy and (b) manufacturing and, thus, they have often attracted the attention of public authorities, (in particular, the Hellenic Competition Committee - HCC), academics, the mass media, and the public. Several reports and studies examine the structure and regulations of the respective markets and investigate oligopoly strategies in these sectors. In particular:

The energy sector is acknowledged to be the most concentrated sector in the Greek economy (see, *inter alia*, EC, 2024; Sideris and Zioutou, 2018). Wholesale electricity is dominated by the Public Power Corporation (PPC), state-majority owned and historically in control of most lignite, hydro, and other generation capacity. It remains the major supplier at both wholesale and retail levels and this has probably led to actions showing abuse of its dominant position.⁸ The potential consequences on the Greek wholesale electricity market include the marginalization of independent power providers and the discouragement of investment in greener energy sources. PPC's conduct may have also led to higher prices for Greek consumers, as well as higher emission levels of local pollution (EC, 2024). The petroleum sector shows concentration and vertically integrated actors (see, *inter alia*, HCC, 2024, 2025; Bragoudakis and Sideris, 2021). Several systemic issues related to lack of capacity transparency, storage access, and exclusivity, remain.⁹

The competitiveness conditions in the manufacturing sector have been analyzed repeatedly by, *inter alia*, the HCC and international organizations (see OECD 2017, 2024; HCC, 2023). The most dynamic sectors in Greek manufacturing are mainly those producing petroleum products, food products, metal products and pharmaceuticals. The OECD Competition Assessment Review (OECD, 2017) identifies numerous regulatory restrictions in Greece's manufacturing-related segments -petroleum, chemicals,

⁷ The total number of firms reported at ICAP in 2023 are: 7186 in energy, 4260 in the information and communication sector, 8593 in manufacturing, 3245 in the transportation and logistics sector, 993 in agriculture, 6203 in construction and 11583 in the professional, scientific and technical services sector.

⁸ PPC has breached EU antitrust policy by selling electricity in the Greek wholesale market below cost, thereby excluding its main rivals (EC, 2024).

⁹ Effective competition conditions are not met across key stages including refining, wholesale, and retail distribution (HCC, 2024). HCC proposed five regulatory measures aimed at improving market competitiveness and facilitating the entry of new players into Greece's fuel sector (HCC, 2025).

pharmaceuticals, plastic, paper/print, and electrical equipment- and makes several suggestions for reforms. Specific structural barriers include licensing/safety regulation inconsistencies, non-harmonized technical standards, limited access to distribution and transport, high administrative burden, and regulatory lack of transparency. Common ownership in major firms (building materials, construction) reduces competitive dynamics and encourages tacit coordination.¹⁰

The reports thus provide evidence for the exert of market power within the energy and manufacturing sectors, which can be also used for price formation. When only a few firms control a large share of activity and supply, they gain the ability to shape and influence prices in that sector. In such an oligopolistic environment, firms may be better positioned to pass on costs or even amplify them. Conversely, small and medium-sized enterprises (SMEs) which form the backbone of the Greek economy, may have to struggle to maintain profitability amid rising input costs and limited pricing power (Greek federation of SMEs, 2023). Some of them may have to even exit the market, making dominant firms to gain more pricing power.

3.5 Inflation across sectors

The development of domestic inflation, based on the annual growth rate of GVA deflator, indicates continued price stability (inflation less than 2%) from 2017 to 2021, followed by substantial increases in 2022 and 2023. The development of GVA deflator index shows that prices were 15.5% higher in 2023 compared to 2019 (see Figure 4).

The evolution of GVA deflator across sectors (see Figure 5) shows significant average increases over the 2021-2023 period in energy (13.8%), agriculture (10.6%), the wholesale and retail trade (8%), construction (6.4%), transportation and storage (5.8%), and the hospitality services sector (5.6%). Price increases are even sharper compared to 2019 levels, as captured by GVA deflator index, with notable price rises registered in transportation and storage (42.7%), agriculture (41.3%), construction (28.9%) and the hospitality services sector (23.8%).

Figure 6 indicates how GVA deflator inflation and real GVA evolved over the years under consideration in total economy. Following the exogenous pandemic shock

¹⁰ The HCC proposes reforming and simplifying regulations (licensing, standards, environmental permits) to unlock competitiveness—especially in chemicals, pharmaceuticals, and packaging. Stronger enforcement of competition laws across manufacturing inputs and supply chains will help deter anti-competitive agreements and market power abuses. Support for SMEs—via access to financing, digital upgrades, training—would help diffuse competitive pressures and foster innovation (HCC, 2023).

in 2020, GVA price inflation increased substantially, significantly higher than real GVA growth in 2022 and 2023, thus pointing to inflationary pressures in an environment of low real production. During the inflationary period 2022–2023, the relationship between growth and prices varied significantly across sectors (see Figure 7). In most cases, high inflation coincided with weak or even negative growth. This was particularly evident in key sectors—such as energy, agriculture, and wholesale and retail trade—where the surge in inflation occurred alongside a contraction in real gross value added.

3.6 The domestic components of inflation

The components of the GVA deflator, i.e. unit profits, unit labour costs and unit taxes are initially computed for the Greek economy as a whole, using the definitions presented in identity (3). In the Greek economy, domestic price pressures, captured by changes in GVA deflator, increased in 2021 and picked up further in 2022 and 2023 mainly due to the unit profit rises (Figure 8). More specifically, the GVA deflator accelerated to 8.0% and to 5.0% in 2022 and 2023, respectively, mainly due to the strong positive effect of unit profits (4.7 pp in 2022 and 2.7 pp in 2023), whereas unit taxes and unit labour costs contributed by less (2.7 pp and 0.6 pp, respectively in 2022, 1.0 pp and 1.2 pp, respectively in 2023).

The development of prices and its domestic components has been quite heterogeneous across sectors. In the key sectors of energy, manufacturing, construction, agriculture and transportation, GVA inflation has been low in the period 2017-2020 and accelerated sharply in the post-pandemic years, as shown in Figure 9. In 2022, unit profits contributed the largest share of the increases in the sectors of energy, manufacturing and construction, implying that in these sectors firms have managed to pass on cost shocks associated with the surge in imported energy and other intermediate production prices to final prices immediately. The increases in the cost of energy were then passed on to the prices of other sectors such as agriculture and transportation and storage with a year lag, in 2023. These increases were more than offset by the producers via the unit profit rises. The contribution of unit taxes has been low up to 2020, but quite high in the post pandemic years, particularly in the energy, the hospitality services sector, the transportation and storage sector and agriculture. These developments may reflect to a certain degree the gradual withdrawal of fiscal measures taken in the context

of the pandemic. The contribution of unit labour costs has been rather low but quite heterogeneous among the different sectors under consideration in the years 2021-2023.

Figure 10 presents the average GVA deflator inflation over the period 2021-2023. The highest inflation rates, over 10%, are recorded in the energy and agricultural sectors. The high rates observed in tradable sectors such as agriculture, the hospitality services sector and manufacturing, have negatively affected the price competitiveness of these sectors.

Figure 11 presents the average contribution of unit profits, unit labor costs and unit taxes for the post-pandemic years 2021 -2023, for each sector. Unit profits contributed the most to inflation in most sectors analyzed: agriculture, construction, energy, transportation and storage, manufacturing, real estate services and professional services. Notably, in construction, transportation and storage, manufacturing and the professional services sectors, the unit profits increased at the expense of unit labor costs, which decreased. Unit labor costs had a positive and higher impact than those of unit profits in the wholesale and retail trade sector. As for taxes, they impacted significantly on inflation in the energy and the hospitality sector.

To indicate clearly the differences across sectors, the average contributions of the domestic components to inflation for the years 2021-2023 are presented in Figures 12-14. Unit profits exert a positive contribution on average in most sectors in the period 2021-2023, although not to the same degree, as shown in Figure 12. High contributions of unit profits are observed in agriculture, construction, the energy sector, the transportation and storage sector, and manufacturing. Unit profits had even negative contribution to the mining and quarrying and the information and communication sector.

The average contribution of unit labor costs to domestic price pressures over the period 2021–2023 appears heterogeneous across sectors, as illustrated in Figure 13. They exerted an upward influence in sectors such as trade, energy, hospitality, and agriculture. The rise in unit labour costs in the labour-intensive services sectors of hospitality activities and trade can be attributed to the tightness of the labour market observed in the Greek economy following the pandemic episode ¹¹. In contrast, their

¹¹ See “The Greek labour market before and after the pandemic: slack, tightness and skills mismatch”, Antonopoulos et al. (2022), Bank of Greece Economic Bulletin, December 2022.

impact was minimal or even negative across the remaining seven sectors. This suggests that, in those sectors, unit profits rose at the expense of unit labor costs. A likely explanation is that wages adjusted more slowly than prices, reflecting their greater rigidity—potentially due to weaker employee bargaining power and the time-consuming nature of wage negotiations in these sectors.

The positive unit taxes contributions reflect the pandemic-related subsidies and tax rate decreases that gradually phased out, as well as the changes that occurred in the composition of private consumption in the post pandemic years. It should be noted that subsidies and tax rate changes were applied mainly to the food and energy products. These products, whose prices rose due to the exogenous supply shocks in 2021 and 2022, make up a significant share of the basket of the representative consumer, and their demand is quite inelastic. The different impact of fiscal policy measures in the sectors is clearly illustrated in Figure 14, with the highest contribution of unit taxes to GVA deflator registered in the tourist services and energy. Fiscal authorities should measure regularly and consider the effects of indirect taxation of particular goods on prices. They should reconsider their tax rates especially when they target inflation and competitiveness.

4. Empirical findings

4.1 The basic model

The empirical analysis is based on the theoretical framework presented in Section 2, which states that market power affects sectoral unit profits. Market power is approximated by the concentration ratios of the largest firms, assuming higher concentration enables greater pricing power and profitability (see, Weber and Wasner, 2023). Demand-driven profit surges are accounted for by domestic demand using sectoral real GVA. Variations of a static parsimonious growth model, denoted as M1, are estimated by the following general specification:¹²

$$M1: \log(UP)_{i,t} = \beta_{01} + \sum_{k=0}^1 \beta_{11k} \log(CR10)_{i,t-k} + \sum_{k=0}^1 \beta_{21k} \log(GVA)_{i,t-k} + c_i + \tau_i + \varepsilon_{i,t} \quad (4)$$

where, UP_{it} is the unit profit for sector i at time t . $CR10_{it}$ stands for the concentration ratio of the top ten largest firms for sector i at time t . GVA_{it} stands for

¹² The specification is static, in the sense that it does not include lagged terms of the dependent variable (unit profits), but variants of the specification allow for lagged effects of concentration and sectoral demand.

real gross value added for sector i at time t ; it enters the specification in order to account for sectorial demand effects and is essentially a control variable. According to the theory, concentration and gross value added are assumed to affect positively profits in the static relationship, so β_{11t} and β_{21t} are expected to be positive. $\varepsilon_{i,t}$ is a zero-mean error term. In addition, since observations within the same sector over time are likely correlated, violating the classical assumption of independent errors, the estimations are performed using clustered standard errors by sector. k denotes the number of lags and accounts for possible hysteresis effects of the independent and the control variables on unit profits. We test for hysteresis effects of up to one lag, (k takes values 0, 1), given that the data span available is short and inclusion of more lags would mean a decrease in the degrees of freedom for the estimations.

The general specification M1 as presented in equation (4) includes sector-fixed effects c_i and time-fixed effects τ_t . The former are used to capture sector-specific time-invariant characteristics, while the latter are used to capture unexpected variation or special events that may affect the dependent variable in certain periods. The sector-fixed effects are used to remove the effect of time-invariant characteristics so we can examine the net effect of the independent variable on the dependent one. Such representative examples of unobservable time-invariant sector variables that may affect unit profits may include structural and institutional characteristics. For instance, the legal and regulatory framework related to the entrance of firms in particular sectors, the different taxation rules, the requirements for entering a profession, barriers to entry a sector due to technology and production scale, can be considered as time-invariant characteristics. All these effects are captured through the sector-fixed effects since other available measures cannot control for them.

4.2 Alternative model specifications

A panel data set of $N \times T$ dimension essentially refers to samples of the same N cross-sectional units observed at multiple points in time T . In the present case, the data set entails cross section observations of the eleven main sectors of the Greek economy ($N=11$) for the (recovery) years 2017-2023 ($T=7$). The restricted sample size and short time horizon impose certain methodological constraints on testing the validity of the estimated baseline outcomes. Consequently, these results warrant cautious interpretation. To enhance empirical reliability, particularly regarding the sign,

magnitude, and statistical significance of the estimated parameters, we estimate several alternative model specifications.

Initially, we estimate a number of static models implying a long-run relationship between unit profits and the concentration rate. We firstly estimate the general static model M1 as defined in (4). Then, we examine alternative specifications which are nested in M1, with current and lagged independent and control variables on the right-hand side. The models, depending on the specification, have different implications for the behaviour of the variables. The alternative static specifications are:

Model 2 (M2) outlines a long-run static relationship where changes in market concentration impact unit profits within the same year:

$$M2: \log(UP)_{i,t} = \beta_{02} + \beta_{12} \log(CR10)_{i,t} + c_i + \tau_i + \varepsilon_{i,t} \quad (5)$$

Model 3 (M3) incorporates, additionally to the effects of concentration, contemporaneous effects from the GVA control variable, demonstrating that demand positively impacts unit profits within the same period.

$$M3: \log(UP)_{i,t} = \beta_{03} + \beta_{13} \log(CR10)_{i,t} + \beta_{23} \log GVA_{i,t} + c_i + \tau_i + \varepsilon_{i,t} \quad (6)$$

Model 4 (M4) implies a one-period lagged response of unit profits to demand shocks, as approximated by the GVA control variable.

$$M4: \log(UP)_{i,t} = \beta_{04} + \beta_{14} \log(CR10)_{i,t} + \beta_{24} \log GVA_{i,t-1} + c_i + \tau_i + \varepsilon_{i,t} \quad (7)$$

Model 5 (M5) assumes lagged effects from the independent and the control variable:

$$M5: \log(UP)_{i,t} = \beta_{05} + \beta_{15} \log(CR10)_{i,t-1} + \beta_{25} \log GVA_{i,t-1} + c_i + \tau_i + \varepsilon_{i,t} \quad (8)$$

The dynamic models then evaluate unit profit persistence. Specifically, the partial adjustment framework in Model 6 (M6) incorporates a one-period lag for unit profits and captures current-period impacts from the independent and control variables.

$$M6: \log(UP)_{i,t} = \beta_{06} + \beta_{36} \log(UP)_{i,t-1} + \beta_{16} \log(CR10)_{i,t} + \beta_{26} \log(GVA)_{i,t} + c_i + \tau_i + \varepsilon_{i,t} \quad (9)$$

Model 7 (M7) incorporates a one-period lag for unit profits, while capturing lagged impacts from the explanatory and control variables.

$$M7: \log(UP)_{i,t} = \beta_{06} + \beta_{37} \log(UP)_{i,t-1} + \beta_{17} \log(CR10)_{i,t-1} + \beta_{27} \log(GVA)_{i,t-1} + c_i + \tau_i + \varepsilon_{i,t} \quad (10)$$

4.3 The econometric techniques

The panel analysis literature suggests a few alternative estimation techniques, which are based on different assumptions regarding the statistical patterns of the constant and the time components. The simplest method is the panel least squares method of estimation which presents results under the principal assumption that there are no differences among the data matrices of the cross-sectional dimension (N). In other words, the model estimates a common constant for all cross-sections (sectors). Practically, the panel least squares method implies that there are no differences between the estimated cross sections. Methods based on different assumptions on the cross-sections effects treat the constant as section specific using different assumptions: The fixed effects (FE) for the cross sections method allows for different constants for each group. Essentially, the FE model analyzes panel data by focusing on within-unit changes, controlling for all time-invariant unobserved heterogeneity, e.g., sector characteristics that don't change over time.¹³ The random effects (RE) method assumes no common constant and handles the constants for each section as random parameters rather than fixed. The RE methodology models unobserved entity-specific heterogeneity as random variables uncorrelated with explanatory variables, allowing for the inclusion of time-invariant predictors.¹⁴

The time period effects methods assume the existence of time-period effects and control for shocks that impact all entities equally. The time FE method aims to capture point-in-time specific deterministic effects, that are not adequately captured by section-specific or period-wide variables but are constant across all entities (e.g., sectors) in a given period, such as a recession or a policy change. The method is implemented by adding dummy variables for each time period to a regression, allowing for the isolation of specific time-varying impacts on the outcome. The purpose is to eliminate omitted variable bias stemming from factors that affect all units equally at a specific time but differ over time. The time RE method treats time as a sample from a larger population

¹³ By using entity-specific intercepts, the FE model eliminates omitted variable bias stemming from these constant, unmeasured factors, focusing solely on how the explanatory variables affect the dependent variables over time.

¹⁴ Generally, in the panel data analysis, the FE model assumes that each section differs in its intercept term, whereas the RE model assumes that each section differs in its error term. When the panel is balanced (i.e., contains all existing cross sectional data), as it is the case of the present analysis, one might expect fixed effects model to work well.

of periods, modeling time-specific variation as random variability around a mean, often used for inference beyond specific years.¹⁵

In summary, the econometric literature on panel data suggests performing the following estimations, which assume: (A) FE for both the cross sections and the time periods, (B) FE cross section and time RE, (C) RE for the cross sections and time FE, and (D) RE for both the cross sections and the time periods.

4.4. The empirical findings

From an economic perspective, there is no rationale to assume that all constant parameters in the relationships should be uniform. Thus, sector-specific FE are theoretically appropriate, allowing for variations in profit margins to reflect sector-specific long-run determinants. Given the data's structural heterogeneity and limited cross-sectional size, the FE models are most suitable for addressing unobserved, sector-specific factors, which affect competition - that may be correlated with the concentration index. Statistically, FE models are robust and known to work well with balanced panel datasets like the one used here (Hsiao, 2013).¹⁶ Therefore, we utilize the (A) and (B) econometric structures to estimate the model specifications M1-M7. Tables 1 and 2 summarize our empirical results. For indicative purposes, we also estimated models M1-M7 applying methods (C) and (D). The results are reported at tables A1 and A2 in the Appendix.

Conceptually, the technique (A) (which assumes cross-section and time FE) is the proper one to be implemented for the topic of the present analysis. It is reasonable to assume that each sector of the Greek economy has its own characteristics and features, which differ from those of the other sectors, throughout the period analyzed. In addition, all sectors experienced the same economic shocks in certain years, which differ from year to year- such as the pandemic shock in 2020 or the energy shock following the invasion in Ukraine in 2022. While the two-way FE results from method (A) are expected to be the most robust and central to our interpretation, we also employ the

¹⁵ To summarize the differences between the two techniques: Fixed effects assume specific time periods are of primary interest, while RE assume they are random samples. FE estimate a unique coefficient (dummy variable) for each period, whereas RE use shrinkage to estimate variance components. RE assume that the time-specific effects are independent of the covariates, while FE do not require this assumption, often making FE more robust against omitted variable bias.

¹⁶ The reason is RE models necessitate a kind of canceling out of idiosyncratic constants, (e.g. opposite signs, similar levels of a_i), so that these are left over to the residuals.

Hausman test to statistically verify whether the FE or the RE specification is more appropriate for handling the time trends. (Hausman, 1978).¹⁷

The results of the estimations are reported in Tables 1 and 2. In the Tables, small letters refer to logs of the respective variables. The results of the static models are reported in columns (1A)-(5B) at Table 1. According to the outcomes, concentration ratio at its current value, turns out to be significant and enters the equations with the expected positive sign, across all model specifications (M1-M4), robust to both econometric estimation structures A and B. Based on the Hausman tests performed, the most reliable specifications are M1A, M2B, M3B, M4B and M5A. In all these estimations, the concentration ratio turns out to significantly affect unit profits. Among these estimations, the theoretically meaningful specification turns out to be M4B, which indicates positive (but insignificant) effects from lagged demand. Similar results are obtained also by the estimations performed by structures C and D, as indicated by the results shown in Table A1 of the Appendix.

The results of the estimations of the dynamic models are reported in Table 2. They indicate that there is no much effect from lagged unit profits, indicating that there are no important persistence effects.

In summary, the most important finding is that the concentration ratio at its current value, turns out to be significant and enters the equations with the expected positive sign, across all model specifications. The result indicates that as concentration rises and the big firms gain market power, competition weakens and unit profits increase. The magnitude of the coefficient ranges between 0.18 and 0.25, signifying that concentration as measured by CR-10 exerts a substantial impact on the formation of unit profits. Structurally, these results underscore that market competition inversely relates to unit profitability. Consequently, regulatory frameworks which allow expansion of the biggest companies or corporate strategies that expand the activity and the market power of dominant firms would lead to unit profit increases. Specifically, a 1-percentage-point increase in the market share of the top ten companies is estimated to trigger an approximate 0.22% increase in sectoral unit profits. The results, thus, verify the theoretical assumptions.

¹⁷ Theory also suggests that the time fixed effects are preferred if studying the exact, unique impact of a specific year, whereas the random effects are better for generalizing results beyond the specific time periods in the data or if time is sparse.

5. Conclusions

The rise in unit profits has been a major driver to price inflation across the euro area in the post-pandemic period. A widely cited explanation in the literature attributes this trend to post-pandemic supply bottlenecks, which temporarily allowed firms in key sectors to exercise market power, thereby increasing profit margins. An additional argument posits that the degree of competition in these sectors plays a more structural role in shaping and driving unit profit growth.

The present study investigates whether market power—measured by sector concentration—is linked to rising unit profits in Greece, and whether this relationship contributed to inflation in the period 2017-2023. Greece serves as a highly representative case, having experienced some of the sharpest post-pandemic increases in unit profits within the euro area. Crucially, the analyzed timeframe follows a period of major structural reforms aimed at liberalizing Greek product markets under the economic adjustment programs. Identifying any significant, lasting relationship between market structure and unit profits is therefore vital, carrying major implications for future economic policy.

Focusing on the eleven growth-driving sectors of the Greek economy, the analysis examines how prices and profits evolved in sectors with strong demand and high tradability. To evaluate the drivers of inflation, the study first decomposes gross value added deflators to assess the individual contributions of unit profits, labor costs, and taxes. It then employs various panel estimation techniques across alternative model specifications to rigorously test the relationship between market concentration and unit profits.

The results show that higher sector concentration is a key and persistent determinant of rising unit profits across the major Greek sectors in the period analysed, indicating that market power played an important role in inflation dynamics. Furthermore, the evidence highlights the distributional effects of market power, which lead to a redistribution of income from labor to capital. This reallocation carries broader macroeconomic implications, as it can exert contractionary effects on aggregate demand due to the higher propensity to consume out of wages rather than profits. Finally, the resulting price increases within these tradable sectors erode their price competitiveness, potentially dampening export performance.

The empirical findings further suggest that monetary policy becomes less effective during supply-side shocks, highlighting the need for monetary authorities to regularly assess policy transmission. This requires developing standardized measures of excess profits and theoretical models that capture how profits amplify shocks, and incorporating these insights into econometric tools for forecasting and policy analysis.

Public policy should address excess profits by strict monitoring to prevent excessive market concentration and by strengthening competition policy through framework reforms, product market liberalization, and sector-specific measures. In addition, close oversight of pricing behavior and, during high inflation, targeted interventions such as the use of buffer stocks or temporary price caps may be needed to contain inflationary pressures.

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Tables and Figures

Table 1: Concentration and unit profits: Static models										
Time period: 2017-2023										
Dependent variable: up										
Static Models	static general model		static independent		static independent and control		lagged control		lagged independent and control	
	M1A	M1B	M2A	M2B	M3A	M3B	M4A	M4B	M5A	M5B
Cross-section	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
Time period	Fixed	Random	Fixed	Random	Fixed	Random	Fixed	Random	Fixed	Random
Estimation Method	Panel Least Squares	Panel Estimated Generalized Least Squares	Panel Least Squares	Panel Estimated Generalized Least Squares	Panel Least Squares	Panel Estimated Generalized Least Squares	Panel Least Squares	Panel Estimated Generalized Least Squares	Panel Least Squares	Panel Estimated Generalized Least Squares
C	0.045 (0.042)	0.218 (0.156)	-0.258 (-2.976)	-0.273 (-3.168)	0.636 (1.277)	0.538 (1.055)	-0.412 (-0.418)	-0.390 (-0.497)	-0.940 (-0.870)	-0.413 (-0.323)
cr10	0.215** (2.913)	0.249 ** (2.424)	0.222** (2.715)	0.208** (2.562)	0.188** (2.239)	0.178** (2.048)	0.225** (2.762)	0.211** (2.537)		
va	-0.192 (-1.928)	-0.107 (-1.549)			-0.104 (-1.707)	-0.094 (-1.483)				
cr10(-1)	-0.078 (-0.854)	-0.220 (-1.870)							0.052 (0.916)	-0.159 (-0.952)
va(-1)	0.148 (0.873)	0.031 (0.184)					0.018 (0.149)	0.013 (0.150)	0.056 (0.455)	-0.028 (-0.183)
Hausman test (p-value)		$\chi^2(4) = 25.41$ ** 0.000		$\chi^2(1) = 2.11$ 0.140		$\chi^2(2) = 3.47$ 0.170		$\chi^2(2) = 2.47$ 0.300		$\chi^2(2) = 35.29$ ** 0.000
Cross sections	11	11	11	11	11	11	11	11	11	11
Observations	77	77	77	77	77	77	77	77	77	77
R²	0.947	0.920	0.943	0.933	0.944	0.934	0.943	0.933	0.936	0.893
Adj R²	0.929	0.902	0.926	0.922	0.927	0.922	0.925	0.921	0.916	0.873
F-Statistic	5.038	5.078	5.721	8.253	54.438	75.774	5.315	7.471	4.724	4.444

Notes: t-statistics in parentheses; *: significant at 10% level ; **: significant at 5% level.

Table 2: Concentration and unit profits: Dynamic models				
Time period: 2017-2023				
Dependent variable: up				
Dynamic Models	with current effects from independent and control variables		with lagged effects from independent and control variables	
	M6A	M6B	M7A	M7B
Cross-section	Fixed	Fixed	Fixed	Fixed
Time period	Fixed	Random	Fixed	Random
Estimation Method	Panel Least Squares	Panel Estimated Generalized Least Squares	Panel Least Squares	Panel Estimated Generalized Least Squares
C	0.543 (0.693)	0.352 (0.465)	-1.155 (1.306)	-0.812 (0.788)
up(-1)	0.119 (0.787)	0.506* (1.896)	0.218 (1.322)	0.548* (1.841)
cr10	0.188 ** (2.158)	0.110 (1.117)		
va	-0.087 (-0.941)	-0.053 (0.581)		
cr10(-1)			0.035 (0.360)	-0.129 (-2.940)
va(-1)			0.091 (0.872)	0.052 (0.471)
Hausman test X2		$\chi^2(3) = 22.73$ **		$\chi^2(3) = 17.28$ **
(p-value)		0.000		0.000
Cross sections	11	11	11	11
Observations	77	77	77	77
R²	0.945	0.919	0.938	0.918
Adj R²	0.926	0.903	0.917	0.901
F-Statistic	51.267	55.133	45.422	54.163

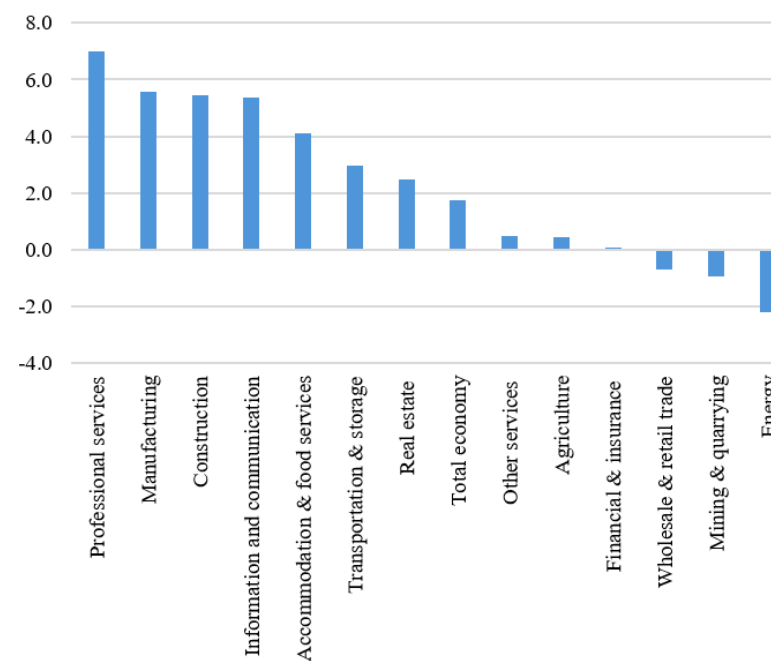
Notes: t-statistics in parentheses; *: significant at 10% level ; **: significant at 5% level.

Figure 1: Greek GDP growth rates (at constant prices): 2017-2023



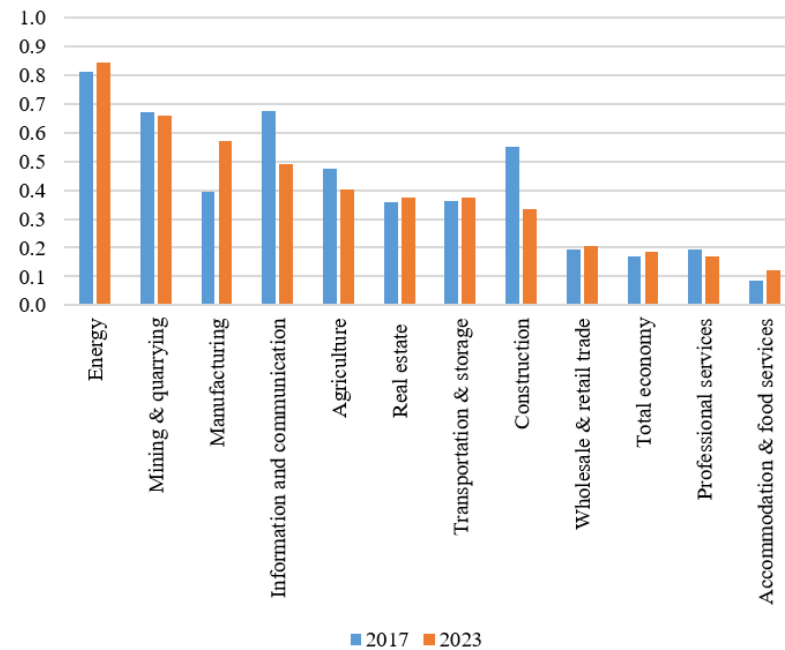
Source: ELSTAT, Annual national accounts.

Figure 2: Sectoral average GVA growth: 2017-2023



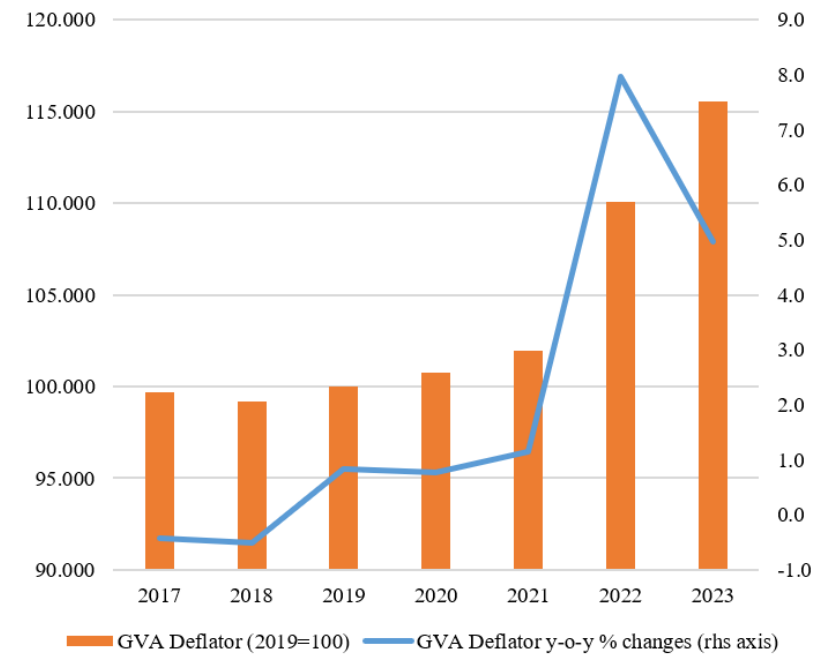
Source: ELSTAT, Annual national accounts.

Figure 3: Sector concentration index CR10: 2017 and 2023



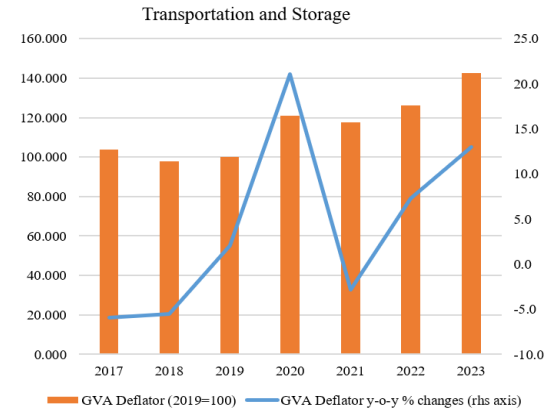
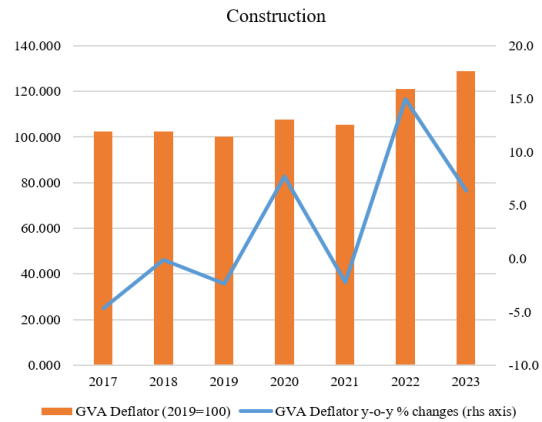
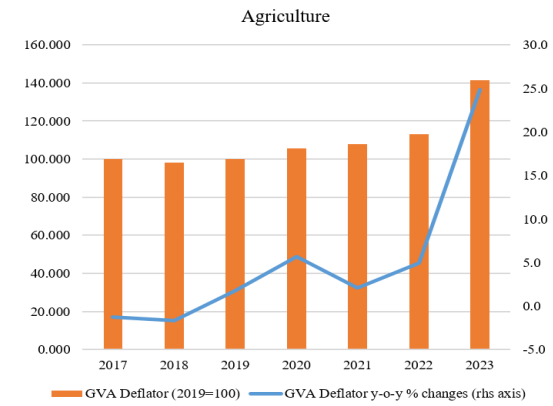
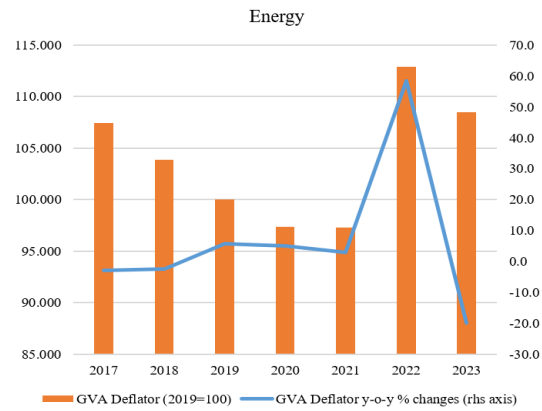
Source: ICAP database and authors' estimations.

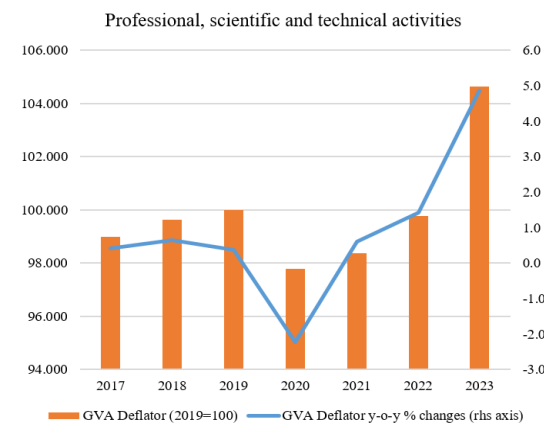
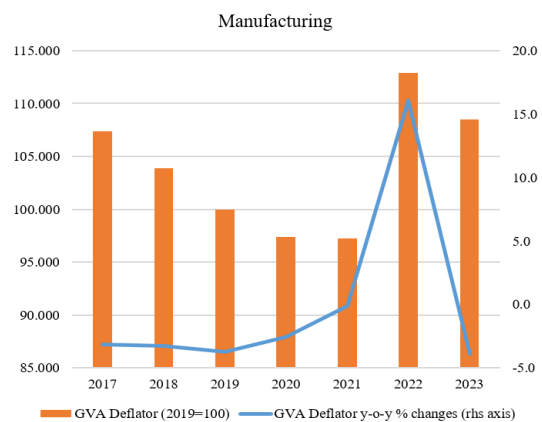
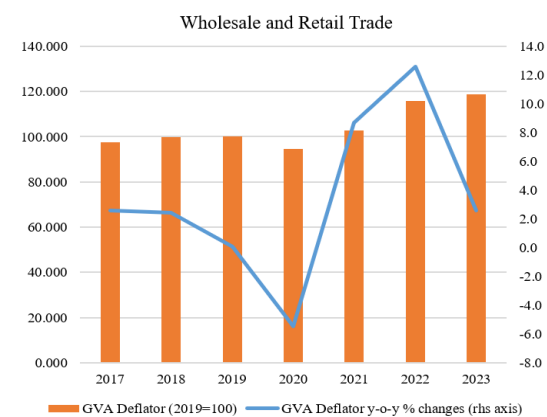
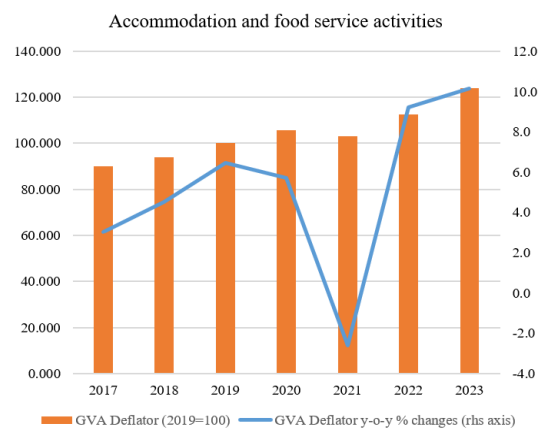
Figure 4: Prices and inflation in total economy

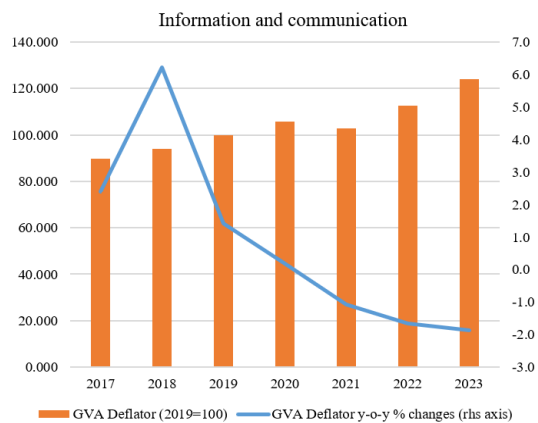
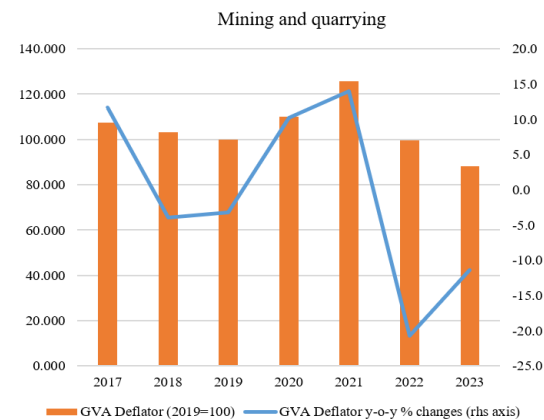
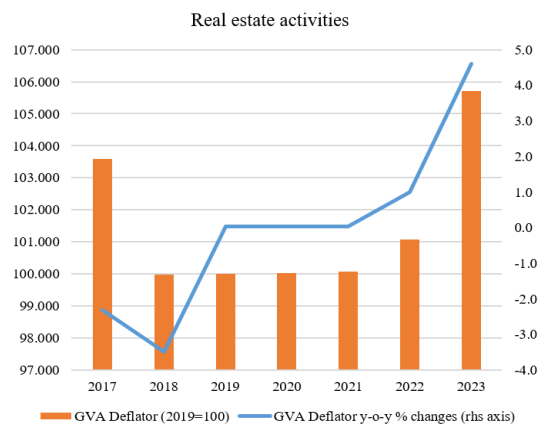


Source: ELSTAT, Annual national accounts and authors' estimations.

Figure 5: Prices and inflation across sectors of economic activity

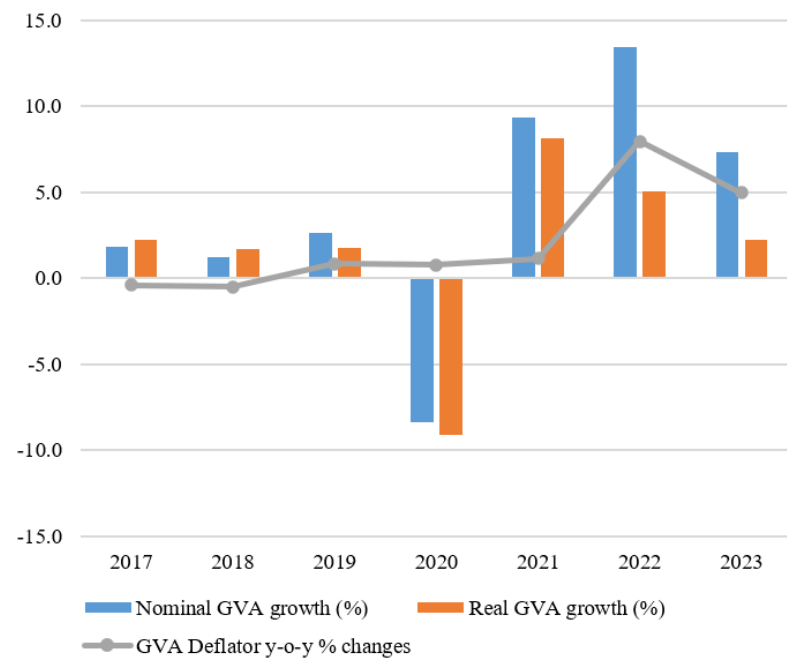






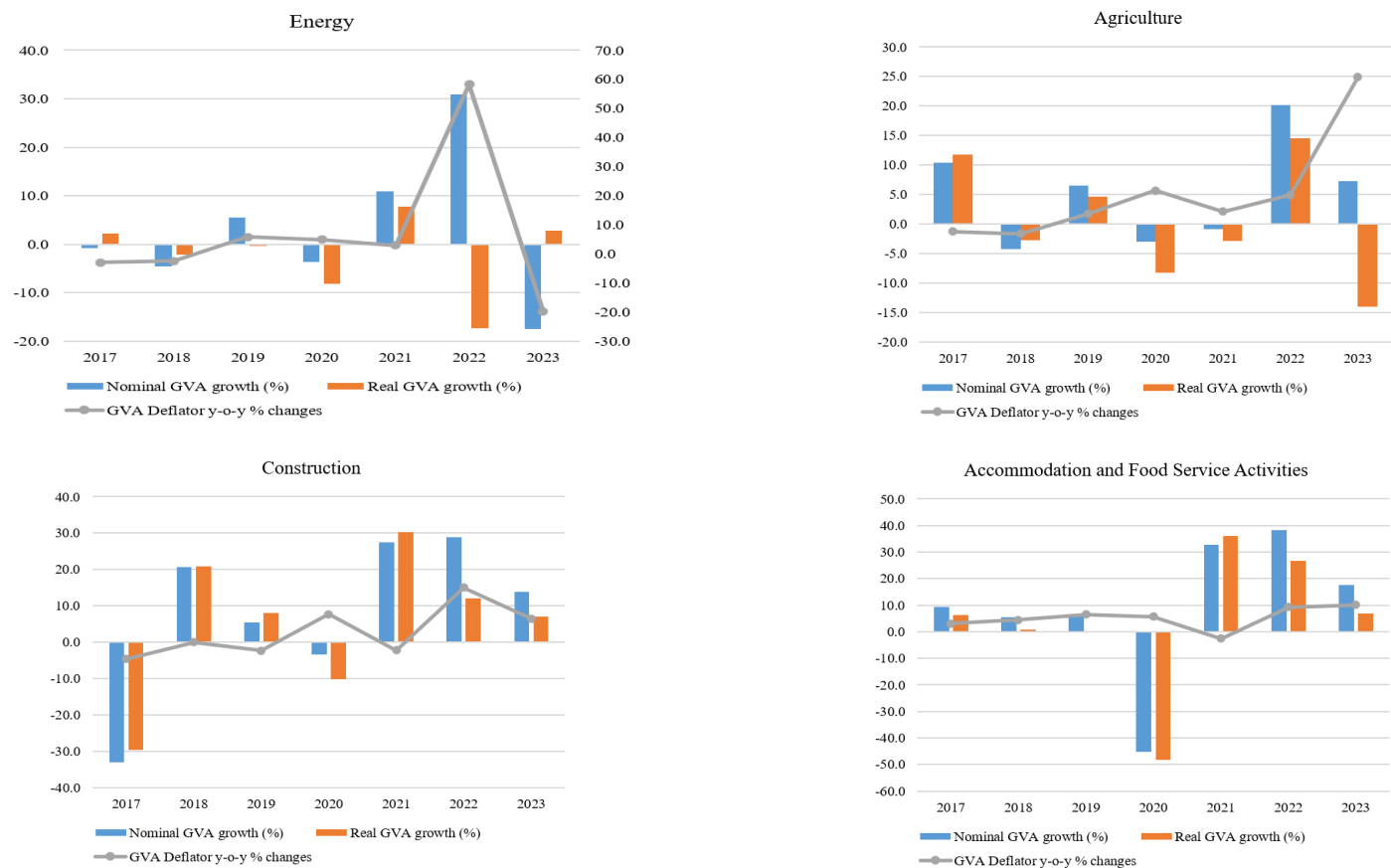
Source: ELSTAT, Annual national accounts and authors' estimations.

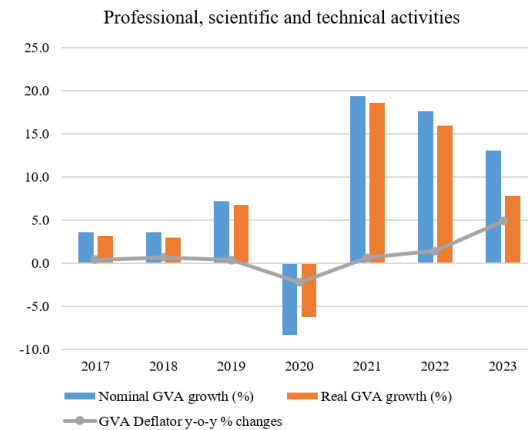
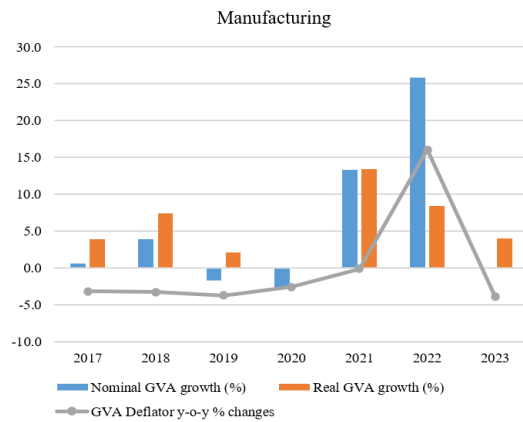
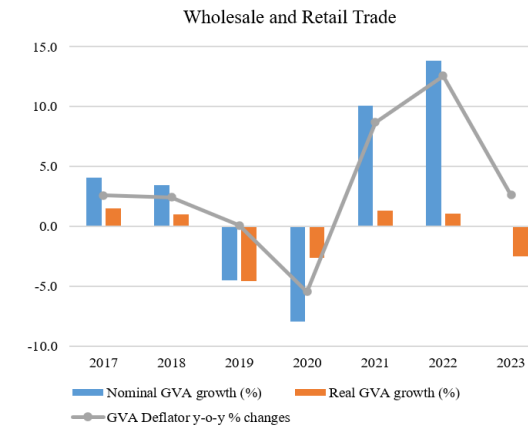
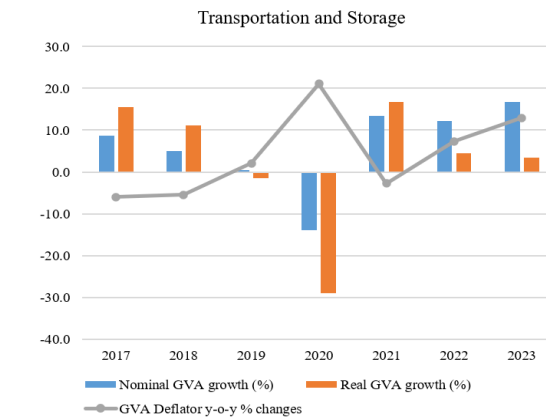
Figure 6: GVA growth and GVA deflator growth in total economy

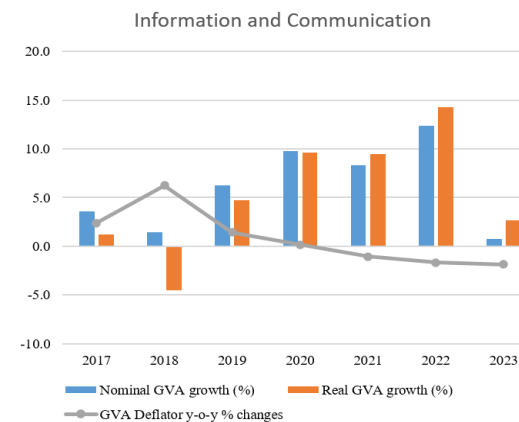
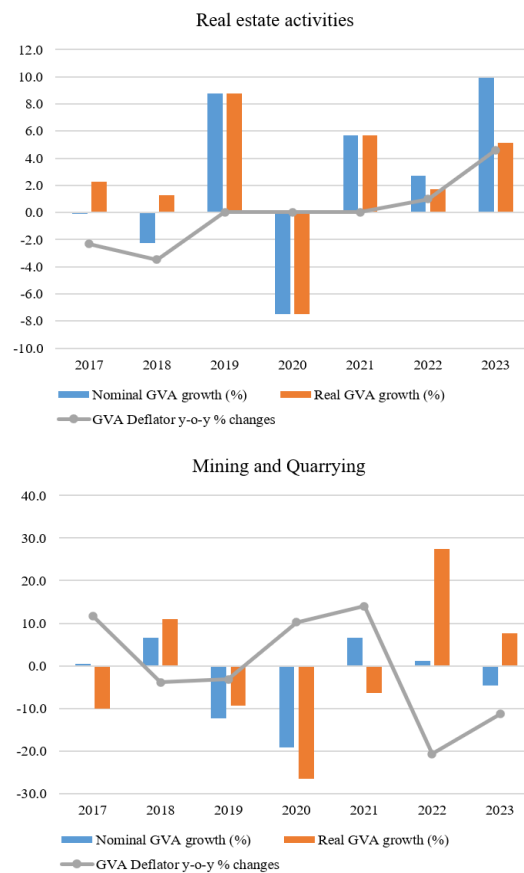


Source: ELSTAT, Annual national accounts and authors' estimations.

Figure 7: GVA growth and GVA deflator growth of sectors

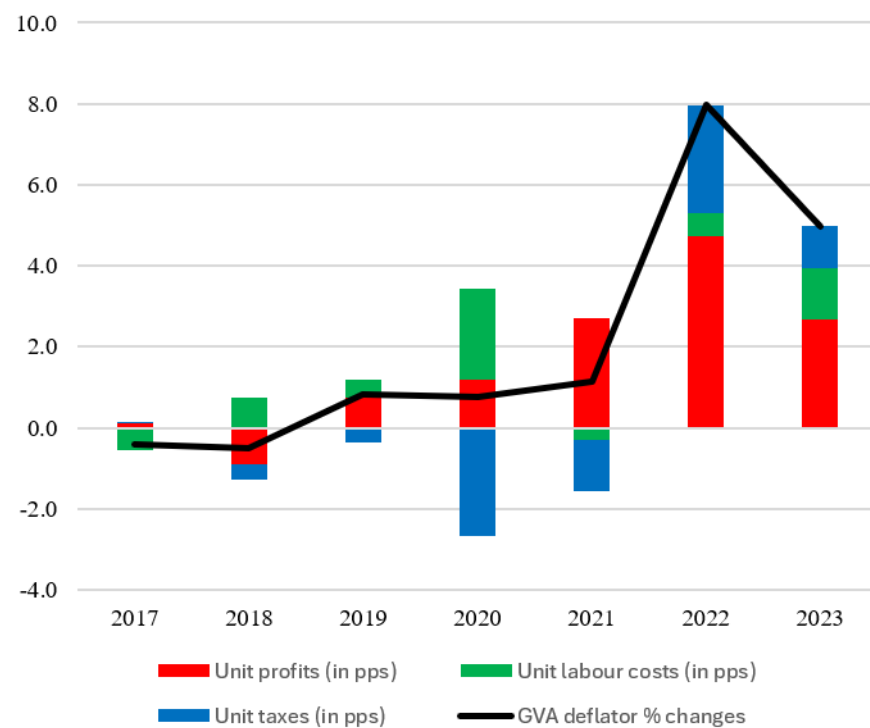






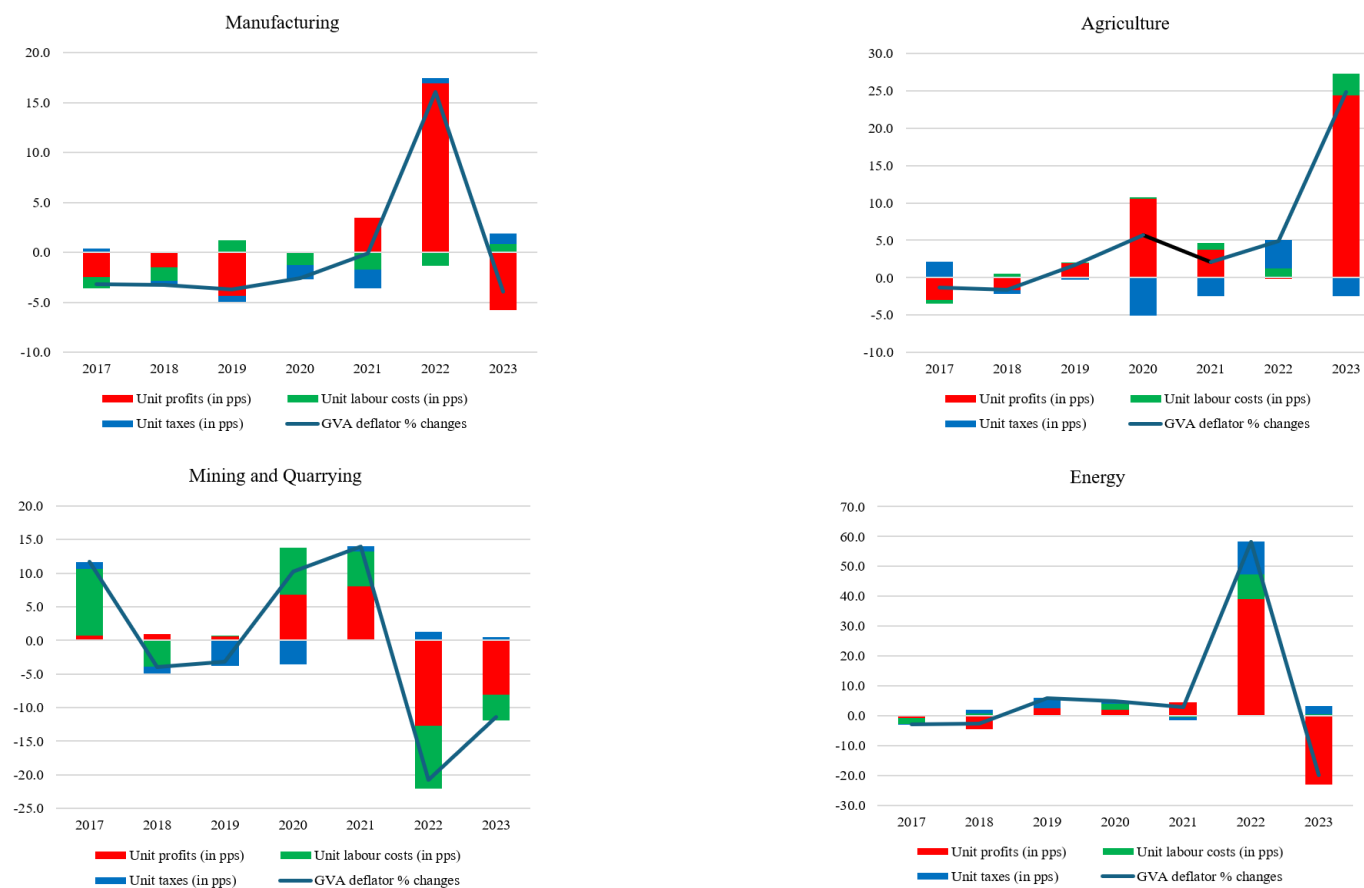
Source: ELSTAT, Annual national accounts and authors' estimations

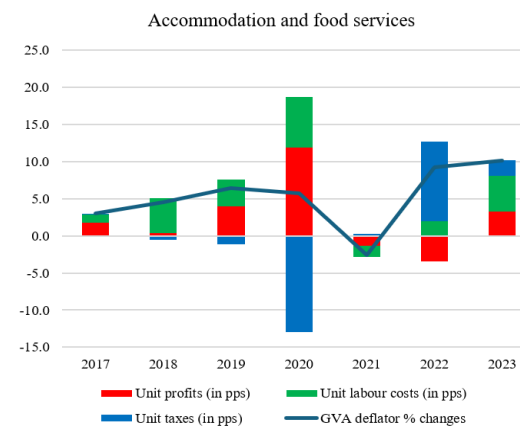
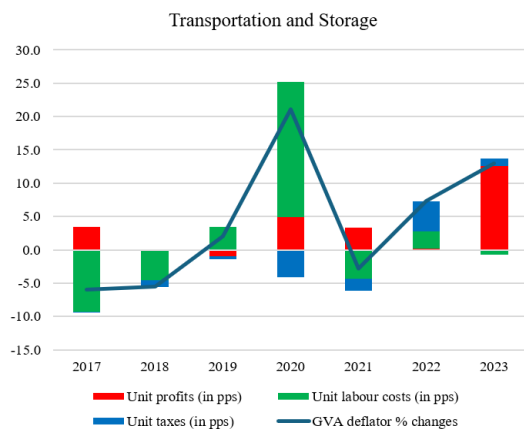
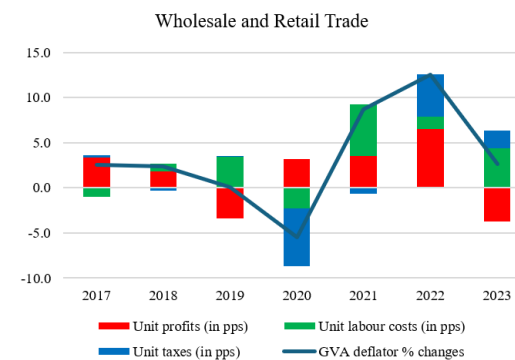
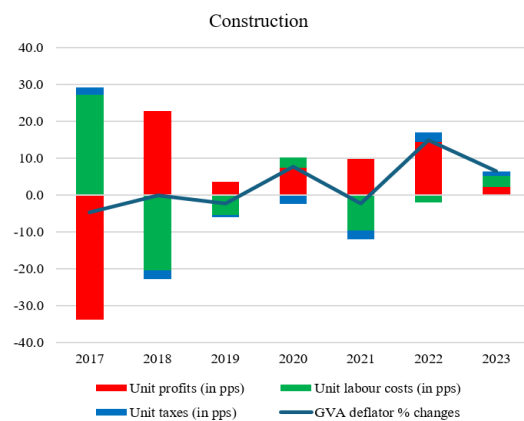
Figure 8: Domestic inflationary pressures in Greece: 2017-2023

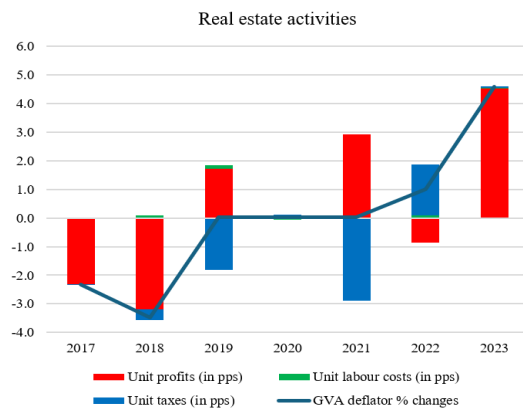
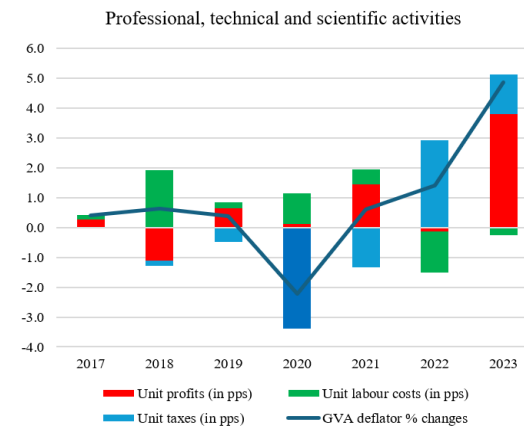
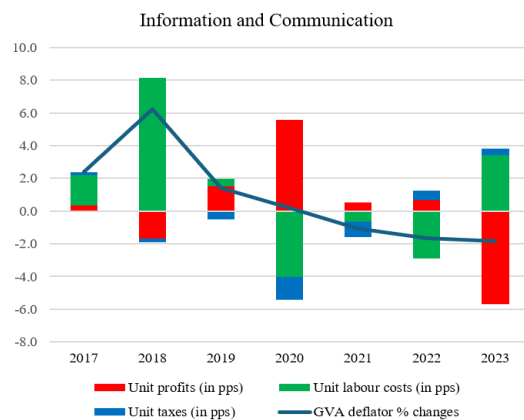


Source: ELSTAT, Annual national accounts and authors' estimations.

Figure 9: Domestic price pressures across Greek economic sectors: 2017-2023

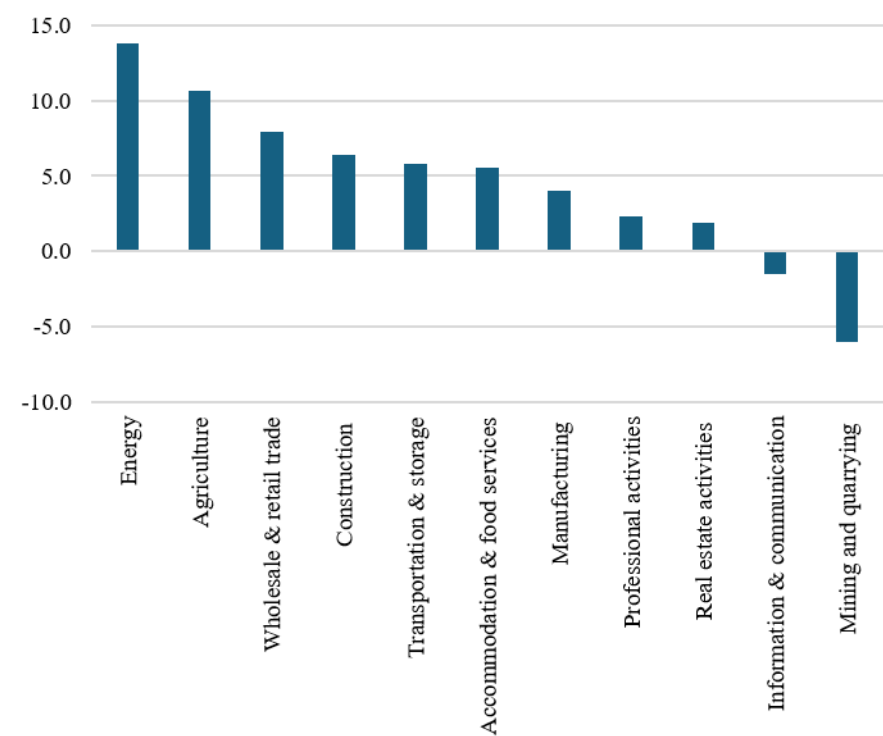






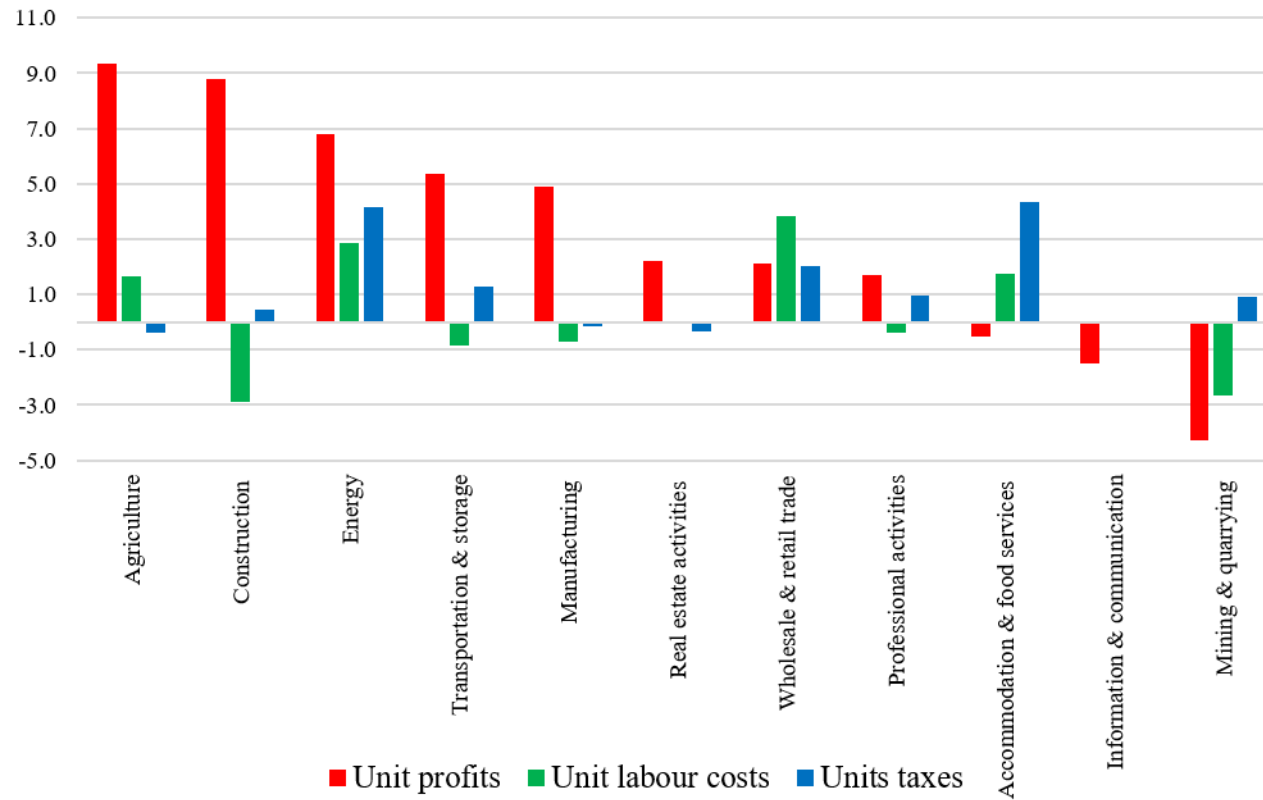
Source: ELSTAT, Annual national accounts and authors' estimations

Figure 10: GVA deflator inflation: 2021-2023 average



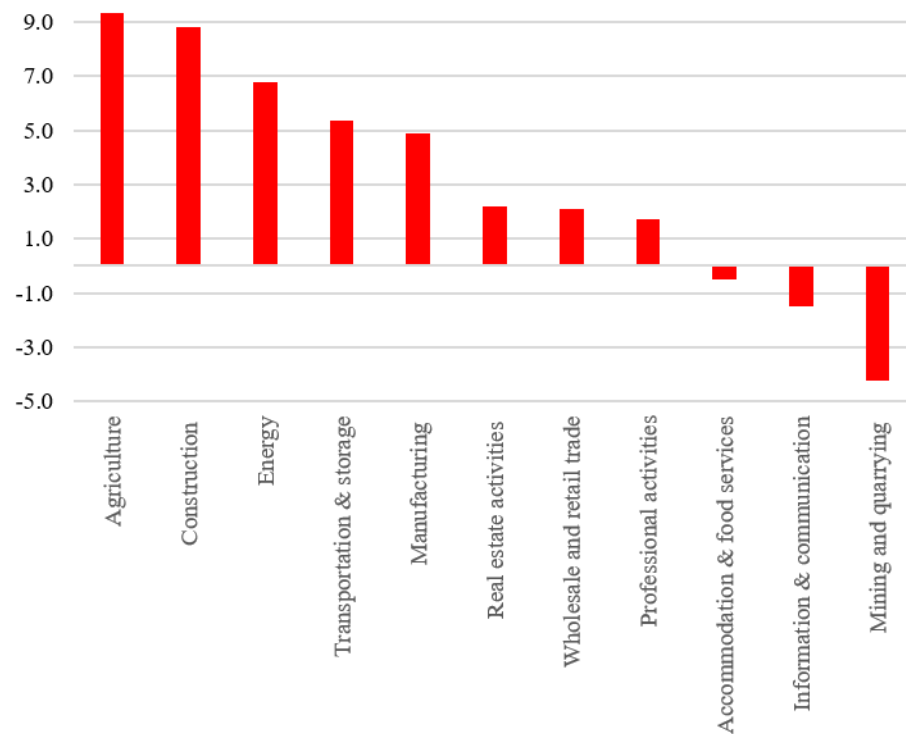
Source: Eurostat and authors’ estimations.

Figure 11: Unit profits, unit labour costs and unit taxes contribution to inflation: 2021-2023 average



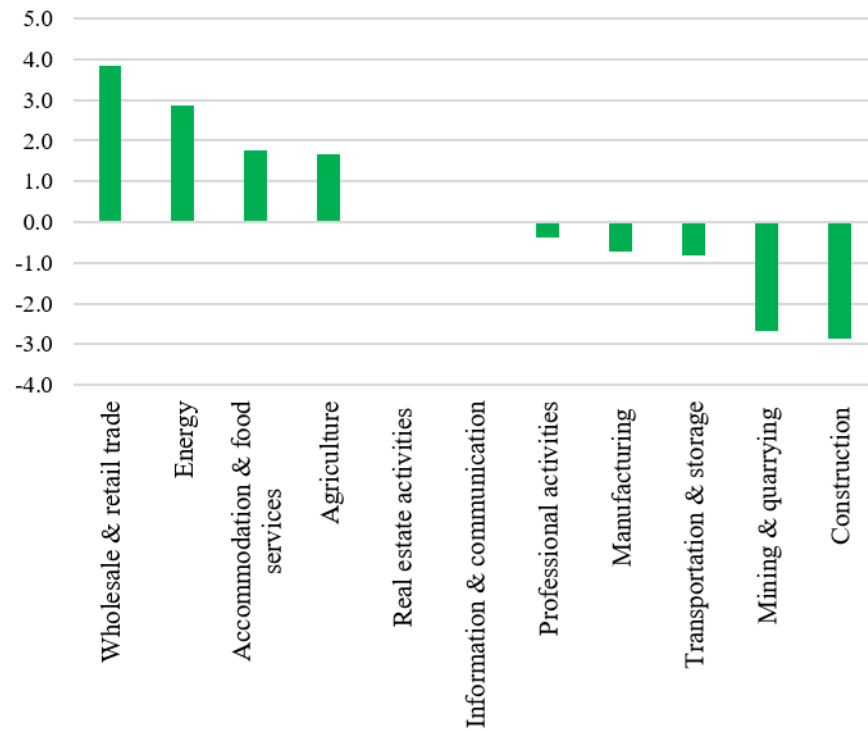
Source: Eurostat and authors' estimations.

Figure 12: Unit Profits contribution to inflation: 2021-2023 average



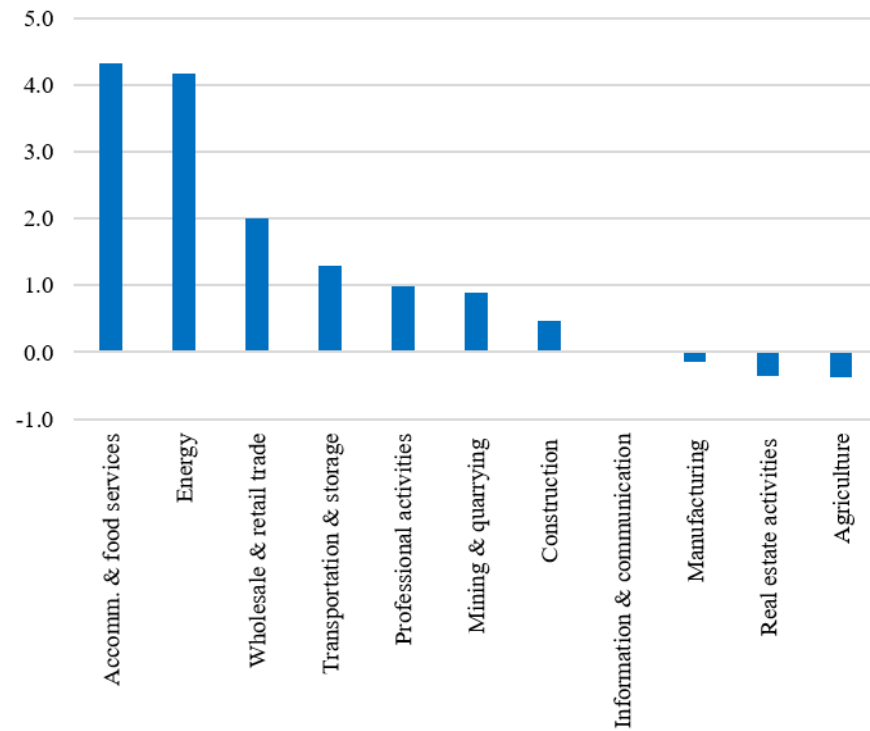
Source: ELSTAT, Annual national accounts and author's calculations.

Figure 13: Unit labour costs contribution to inflation: 2021-2023 average



Source: ELSTAT, Annual national accounts and author's calculations.

Figure 14: Unit taxes contribution to inflation: 2021-2023 average



Source: ELSTAT, Annual national accounts and authors' estimations.

APPENDIX

Table A1: Concentration and unit profits										
Time period: 2017-2023										
Dependent variable: up										
Static Models	static general model		static independent		static independent & control		lagged control		lagged independent & control	
	M1C	M1D	M2C	M2D	M3C	M3D	M4C	M4D	M5C	M5D
Cross-section	Random	Random	Random	Random	Random	Random	Random	Random	Random	Random
Time period	Fixed	Random	Fixed	Random	Fixed	Random	Fixed	Random	Fixed	Random
Estimation Method	Panel GLS	Panel GLS	Panel GLS	Panel GLS	Panel GLS	Panel GLS	Panel GLS	Panel GLS	Panel GLS	Panel GLS
C	-0.485 (-0.498)	-0.314 (-0.269)	-0.290 (-3.693)	-0.301 (-2.304)	-0.940 (-0.870)	-0.413 (-0.323)	-0.762 (-1.217)	-0.737 (-1.175)	-1.039 (-1.070)	-0.627 (-0.526)
cr10	0.212** (2.293)	0.252** (2.155)	0.193** (-2.609)	0.182** (2.461)	0.052 (0.916)	-0.159 (-0.952)	0.207** (2.698)	0.195** (2.563)		
va	-0.169 (-1.438)	-0.081 (-0.941)			0.056 (0.455)	-0.028 (-0.183)				
cr10(-1)	-0.072 (-0.797)	-0.202 (-1.855)							0.068 (0.918)	-0.110 (-1.723)
va(-1)	0.185 (1.055)	0.067 (0.392)					0.055 (0.762)	0.050 (0.712)	0.069 (0.617)	0.002 (0.014)
Cross sections	11	11	11	11	11	11	11	11	11	11
Observations	77	77	77	77	77	77	77	77	77	77
R²	0.492	0.106	0.445	0.075	0.936	0.893	0.451	0.082	0.397	0.019
Adj R²	0.415	0.056	0.389	0.062	0.916	0.873	0.386	0.057	0.326	-0.007
F-Statistic	6.391	2.136	7.904	6.058	47.240	44.441	6.979	3.293	5.595	0.733

Notes: t-statistics in parentheses; *: significant at 10% level ; **: significant at 5% level.

Table A2: Concentration and unit profits: Dynamic models M6 M7				
Time period: 2017-2023				
Dependent variable: up				
Dynamic Models	M6C	M6D	M7C	M7D
Cross-section	Random	Random	Random	Random
Time period	Fixed	Random	Fixed	Random
Estimation Method	Panel GLS	Panel GLS	Panel GLS	Panel GLS
C	-0.120 (-0.690)	-0.104 (-1.109)	-0.141 (-0.768)	-0.128 (-0.983)
up(-1)	0.931* (1.913)	0.932* (1.798)	0.933* (1.926)	0.934* (1.812)
cr10	0.006 (0.153)	0.002 (0.215)		
va	0.013 (0.586)	0.011 (1.253)		
cr10(-1)			-0.004 (-0.119)	-0.008 (-0.349)
va(-1)			0.014 (0.628)	0.012 (0.807)
Cross sections	11	11	11	11
Observations	77	77	77	77
R²	0.9062	0.8957	0.9071	0.8958
Adj R²	0.8936	0.8914	0.8946	0.8915
F-Statistic	7.1933	2.0887	7.2671	2.0922

Notes: t-statistics in parentheses; *: significant at 10% level ; **: significant at 5% level.

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