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### Was There Any Greed After All? The Lack of Greedflation Evidence in Greek Economic Data

*Ioannis Krompas*

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# Was There Any Greed After All? The Lack of Greedflation Evidence in Greek Economic Data<sup>1</sup>

Ioannis Krompas<sup>2</sup>

## Abstract

As Greece has been experiencing a 9.6% inflation in 2022 and 4.2% in 2023, a policy narrative has risen claiming that corporate profits are to blame for the price hikes. However, Greek economic data indicate that when precisely defined, corporate unit profits are within their usual range. Furthermore, publicly available data indicate that corporate mark-ups (price-to-cost ratios) are relatively stable and primarily driven by the increases in costs of goods sold, with a mild increase being attributed to temporary business support measures in force in 2021. In addition, there is the overlooked demand-side component of inflation, contributing up to 50% in price increases between 2021 and 2022, fueled by the country's fiscal responses to the crises of COVID-19 and the energy crisis of 2021-2022, both of which were among the largest in the world relative to GDP. On top of that, spending of the funds available under the RRF, with Greece once again spending the most in the E.U. relative to its GDP, further contributes to the inflationary pressures. As a result, it is imperative that any government financial support against increasing prices must be better targeted to not work as an income boost, fueling demand side inflation, and that the RRF plan be quickly implemented to lower prices by increasing the country's productivity, rather than providing widespread income support in the hope of lowering mark-ups and prices only by enforcing competition regulations, which may bring opposite results than those intended.

**Keywords:** Greedflation, Corporate Profits, Mark-ups, Inflation, Greece.

## Introduction

Defined as an increase in the general level of prices by corporations over that which would be justified by rising costs of production, Greedflation is a controversial theory popularized during the ongoing post-COVID-19 inflationary cycle. Under this theory, corporations take advantage of the rising inflation and their market power, to excessively increase prices and subsequently their profit margins at the consumers' expense, creating further inflationary pressures in the process. While ECB has admitted to be monitoring profit margin levels (ECB, 2023), in Greece it was the Hellenic Parliamentary Budget Office's (HPBO) report (Kountetakis et al., 2023), that started the policy debate about greedflation, by referencing the work of Hansen et al. (2023), who by decomposing the Euro Area's GDP deflator, found that 45% of its growth between 2022:Q1 and 2023:Q1 can be attributed to higher domestic profits (with another 40% being attributed to increases in import prices and the remaining 15% to wage increases).

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<sup>2</sup> NBG Economic Research, Ph.D. candidate, Panteion University, Greece.

Indeed, the release of the HPBO's report in July 2023, sparked a hot policy debate regarding the extent of the role of profit margins in shaping prices, as later on Bank of Greece's Governor called corporations in specific sectors (such as energy and food) to limit their profit margins (Stournaras, 2023), with heads of several other policy institutions and academics stating that there is some sort of profit-driven inflation caused, for example, by the lack of market competition (Liargovas, 2023), the concentration of market power to international conglomerates (Baltas, 2023) or by the corporation's unwillingness to lower prices despite falling costs (Petrakis, 2023).

Against this background and given that the inflation averaged at 4.2% during the first half of 2023 (vs 9.6% during 2022 and 3.1% during 2021:H2, when inflationary pressures started) (Elstat, 2023), in this paper it is examined whether or not firms illicitly boosted their profit margins and hence their profitability under the pretense of cost-driven inflation. Policy implications from confirming excessive increases in corporate profit margins are significant as it means that the focus must shift away from monetary and fiscal policy to imposing competition regulations and limiting abuses of market power.

The rest of the paper is based on Hahn (2023), whose work provides a blueprint for analyzing the relationship between corporate profits and inflation. More specifically, section 2 examines corporate profit developments in national accounts, thus approaching the issue from a macroeconomic perspective. Section 3 analyzes corporate pricing strategies as evidenced by company mark-ups (approaching corporate profitability in a microeconomic setting). Section 4 focuses on the contribution of demand-side factors to inflationary pressures. Lastly, the remainder of the paper discusses the findings and the policy implications that arise from them.

### **Corporate profits from a macroeconomic perspective**

In the work of Hansen et al. (2023) the authors estimate the unit profits of corporations by dividing the Gross Operating Surplus and Mixed Income (GOS-MX)<sup>3</sup> with real Gross Domestic Product (GDP), this helps examine the profitability of the corporate sector regardless of the level of economic activity. Furthermore, as GOS-MX is a subcomponent of GDP from the income side (along with Wages and Salaries and Net Taxes), and the division of nominal with real GDP is the GDP deflator

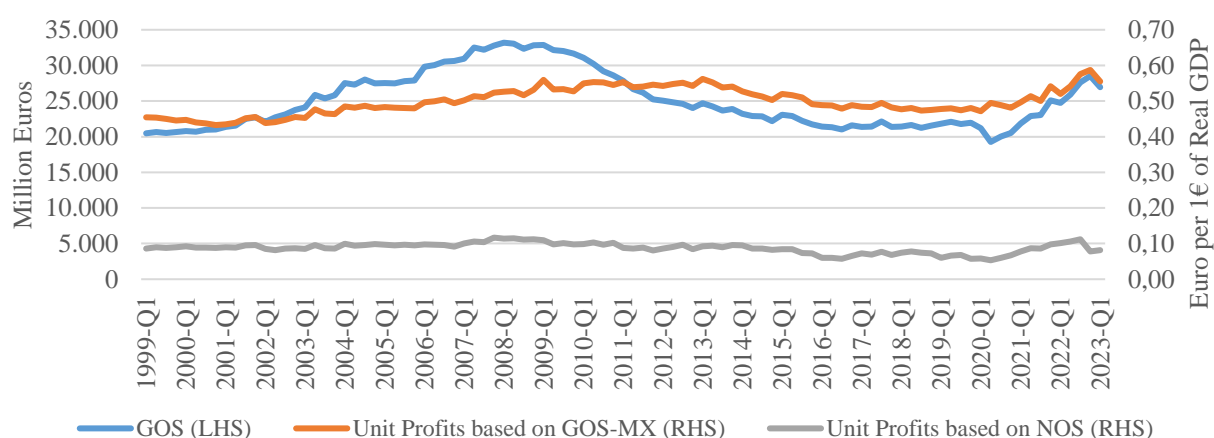
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<sup>3</sup> Eurostat defines Gross Operating Surplus and mixed income as “the surplus (or deficit) on production activities before account has been taken of the interest, rents or charges paid or received for the use of assets. Mixed income is the remuneration for the work carried out by the owner (or by members of his family) of an unincorporated enterprise. This is referred to as 'mixed income' since it cannot be distinguished from the entrepreneurial profit of the owner.” (Eurostat, 2023)

(which captures inflation in a national account setting), unit profits also show the percentage of the excess nominal value per unit of volume output that is absorbed by corporations.

Using this approach to determine inflation contributions of the Greek business sector, however, comes with some serious caveats. First of all, the Greek business sector is comprised to a larger extent of sole proprietors and unincorporated enterprises compared to other countries of the European Union. Furthermore, the greatest share of housing stock belongs to households rather than real estate businesses, thus most of the rent income is not reported as corporate profit but rather as non-wage household income, and given that rents have increased 23% since 2019 (SPI, 2023) and the inelastic nature of the housing market, this has most likely resulted in increased income from rents for households. These characteristics of the Greek business economy mean that a greater share of GOS-MX is reported under Mixed Income rather than Gross Operating Surplus, which blurs the image of developments in corporate profits. This is important as it is corporations who have the market power to impose higher prices and higher profit margins, increasing inflation in the process under the “greedflation hypothesis”. Micro enterprises and sole proprietors due to their large number and small size can safely assumed to be price takers. On top of these, Gross Operating Surplus includes the consumption of fixed capital<sup>4</sup>, which usually constitutes a cost for businesses. To avoid all these problems, it is preferable to examine the Net Operating Surplus of Non-Financial Corporations (NOS) as a proxy for corporate profits, which, divided by the real GDP, yields the corresponding unit profits. Figure 1 shows developments in GOS-MX, unit profits based on GOS-MX, and unit profits based on NOS:

**Figure 1: Greek Business sector profits and unit profits**



Sources: Elstat (2023) and author's calculations.

<sup>4</sup>Eurostat defines consumption of fixed capital as the “decline of fixed capital in value due to normal wear and tear, foreseeable ageing (obsolescence) and a normal rate of accidental damage” (Eurostat, 2017).

Both overall GOS-MX and unit profits based on GOS-MX have been on the rise since 2021:Q2 and peak in 2022:Q2, most likely due to windfall profits of energy corporations<sup>5</sup>, as wholesale energy prices had also peaked during that quarter.

On the other hand, unit profits based on NOS, which historically account only for c. 18% of unit profits based on GOS, have also increased, but only back to their 2014-2015 levels and in 2023:Q1 stand at the same level as their 10-year average (whereas unit profits based on GOS insofar 2023 stand 8% higher than their respective 10-year average). It is thus evident that no excessive profiting is taking place, at least in a national account setting, where only final goods and services are considered. To examine corporations providing both final and intermediate goods and services, one must turn to corporate accounts data.

### **Greek corporate pricing strategy in the post-pandemic inflationary environment**

To examine whether the extent of price increases is analogous to the cost businesses face or whether businesses take advantage of the situation by increasing prices extensively, one should examine businesses' mark-ups. Mark-up is defined as price over marginal cost but given the fact that marginal costs are difficult to estimate, the average cost is often used. The ratio of price and average cost can be estimated by the ratio of turnover over total cost (as turnover and total cost are price and average cost times quantity respectively). Overall, there are three possible scenarios when a firm raises its prices in response to an increase in its average cost:

1. **1-to-1 pass-through:** A firm can increase its prices by 1€ for every euro of average cost increase. This way, mark-ups as a ratio are suppressed and the company while retains the same profit per unit sold, it does so in nominal terms, as profits are not adjusted for inflation.
2. **Same percentage increase:** A firm can increase its prices by the same percentage its average cost is increased. This way the mark-up remains constant, and the company protects its profits against inflation, as nominal profits are increased by the same percentage as inflation (under the assumption that inflation is in its entirety cost-driven).
3. **Excessive price increase:** A firm's price increases outpace that of the average cost in percentage terms. This way mark-ups increase and profits per unit sold increase more than inflation (under the assumption that inflation is in its entirety cost-driven)<sup>6</sup>.

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<sup>5</sup> Up to 90% of which were later taxed away in accordance with E.U.'s and Greek Government's decisions to offset the effects of the energy crisis (Enache, 2023).

<sup>6</sup> Firms may also increase prices in anticipation for higher costs in the near future. Mark-ups may also temporarily increase as firms may be reluctant to lower prices in the face of falling costs, if they anticipate that this cost reduction is temporary.

If the greedflation hypothesis holds, the majority of firms, across sectors, should have significantly increased mark-ups adding to the inflationary pressures. Table 1 presents developments in turnover and total cost for all business sectors in 2021 (vs 2019)<sup>7</sup>.

**Table 1: Greek Business Sector mark-up developments in 2021 (vs 2019)**

	<b>Turnover</b>	<b>Total Cost</b>	<b>COGS</b>	<b>OPEX &amp; Financial costs</b>
Agriculture	25%	19%	20%	7%
Mining-quarrying	3%	-9%	0%	-26%
Manufacturing	17%	16%	17%	10%
Energy-water	44%	14%	40%	-60%
Construction	17%	14%	10%	32%
Trade	14%	12%	13%	4%
Tourism	-13%	-18%	-13%	-26%
Transport-ICT	-2%	2%	3%	1%
Other Services	10%	5%	9%	-5%
<b>Total</b>	<b>15%</b>	<b>12%</b>	<b>15%</b>	<b>-4%</b>

Sources: ICAP CRIF (2023, 2022), author's calculations

Putting aside sectoral variations, business sector turnover in 2021 grew 15% (vs 2019), whereas total costs increased by 12% (vs 2019), implying a markup increase of 3%. However, by decomposing the total cost into the cost of goods sold (COGS) and operating expenses (OPEX) and financial costs it is found that turnover grew by the same amount as COGS (which captures the costs of raw materials and other inputs). On the other hand, operating expenses and financial costs, which include wages and other business day-to-day costs, interest payments, and other financial obligations, declined by 4%. Given that, in 2021 unemployment declined -3.1% vs 2019 (ELSTAT, 2023) and total wage expenditure increased 2.5% in 2021 vs 2019 (ELSTAT, 2023), operating and financial obligations should have been increased. However, as 2021 was a year influenced by lockdowns and the pandemic, the decline in OPEX and financial costs likely reflects the business support measures that were in force at the time. Those measures included deferring social security contributions, postponing loan payments, and energy subsidies in an attempt to “jumpstart” the economy, and as so, they were temporary in nature, thus it is logical that firms did not incorporate them in their pricing strategy.

<sup>7</sup> 2020 is excluded as an abnormal year due to COVID-19 related lockdowns, 2019 also serves well as a base year as then prices were relatively stable. 2022 data were not publicly available at the time of writing of this policy brief.

Mark-ups can be expected to have slightly deteriorated in 2022 and 2023 given that support measures were gradually rolled back, and regulations were introduced requiring key consumer and raw material providers to keep stable their gross profit margins (Laws 4818/2021 and 5045/2023).

### **Demand-side inflationary pressures**

So far, the analysis has been considering supply-side contributions to inflation, but in economics, an outcome is rarely a result of only one effect. More specifically, it has been shown that demand-side factors accounted for 30% up to 50% of inflation between 2021:Q1 and 2022:Q3 (Bank of Greece, 2022). The strong momentum of demand is also evidenced in the upward trends of both household consumption in volume terms, which grew by 4% y-o-y in 2023:H1, following an 8% y-o-y increase in 2022 (ELSTAT, 2023) and household savings (+4.5% y-o-y in 2023:H1 vs +4.6% in 2022) (Bank of Greece, 2023), indicating that households increase their consumption and manage to keep money on the side, despite the increasing prices.

Apart from the economic recovery of the last years, it is the current fiscal policy that heavily influences these demand developments and their subsequent contribution to inflationary pressures. More specifically:

1. Greece's COVID-19 support (either in the form of spending or in deferred/foregone revenues) amounted to 28% of the 2019 GDP (IMF, 2021), this enabled both firms and households not only to stay afloat during the pandemic but to hoard savings which they would later spend, creating excess demand in the process.
2. In the aftermath of the pandemic, during the energy crisis of 2021-2022, Greece once again deployed one of the largest fiscal support measures among OECD countries to offset energy price increases (6.3% of GDP). Furthermore, 80.6% of those measures did not target specifically the most vulnerable households but were rather untargeted (OECD, 2023). This lack of targeting led energy support measures to act as an income boost for better-off households.
3. Greece is the largest recipient of funds from the Recovery and Resilience Facility (RRF) compared to the size of its economy (20% of 2021 GDP<sup>8</sup>). As the available funds are channeled into the economy, inflationary pressures are to be expected. In fact, simulations run by the Bank of Greece indicated that RRF spending would indeed create inflationary pressures in the short run, which will eventually be counter-balanced by longer-term

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<sup>8</sup> Including the RepowerEU chapter subsidies and extra €5bn. in loans requested from the EU Commission in the Greece 2.0 RRF plan modification in August 2023 (European Commission, 2023).



deflationary pressures, caused by the increase in productivity induced by the RRF plan (Malliaropoulos et al., 2021).

Government spending has been excessive between 2020 and 2023 as other policy objectives (such as surviving COVID-19 lockdowns, enduring energy price spikes, and implementing the Greece 2.0 plan) were prioritized over price stability. Nonetheless, the size of government spending and the robust increases in real consumption and savings, indicate that indeed there is a demand-side boost in inflation. If the greedflation hypothesis held, and increased corporate profit margins drove price increases, then inflation should be combined, at least to some extent, with a slowdown in consumption and possibly a decline in household savings, as companies would take advantage of excessive market power to increase prices and in products with inelastic demand.

## Conclusions

In the previous sections, it was shown that corporate unit profits are in line with their historic levels when precisely defined and that markups are broadly stable (up to the period that available data exist), showing only a small increase which can reasonably be attributed to the temporary support measures at force in 2021. Therefore, price increases from the supply side of the economy are most likely fueled by increases in the costs of goods sold, which can be attributed to factors such as the lower availability of supply - for example in agriculture, where crop output was in decline in 2022 (Eurostat, 2023) - and the increasing number of trade-restricting interventions globally, which have nearly quadrupled since 2019, impacting the cost of international trade for a number of commodities (IMF, 2023). Demand side effects are also found to play a significant role in price increases. As a result, there is no indication that there are excessive profits at an economy-wide level, fueled by excessive price increases, that could lead to characterizing inflation as profit-driven.

These findings raise significant policy issues, as the debate around the “greedflation hypothesis” persists. More specifically, should the narrative of greedflation be adopted as an explanation for price developments:

1. The government may be misled (or provided with an alibi) to keep providing households and businesses with financial support against rising prices, to ease both political pressure and social unrest, in the hope that competition authorities will enforce market regulations and lower mark-ups, while, in reality, what the government will be doing is fueling demand-driven inflation.



2. Households, under the impression that corporations reap unusually high profits would demand further financial support from the government and press for wage increases, potentially causing an inflationary spiral.
3. Corporations, seeing that profit margins are overregulated, and a possible increase in their costs may not be able to be accommodated by an increase in prices may lower their investment appetite or willingness to enter the Greek market, in the face of this increase in uncertainty. As a result, neither productivity nor competition in the economy will improve, both of which contribute to lower prices.

It is, therefore, important for economic policy advisors and policymakers to take into consideration the full range of available data before conducting policy, as they are in danger of producing the opposite outcomes than the ones desired. For example, better targeting of financial aid to households and businesses is necessary along an as quick as possible implementation of the RRF plan, which are necessary first steps for easing inflationary pressures.

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