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Questioning profit inflation as an explanation of the post-pandemic inflation

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The COVID-19 pandemic eventually gave rise to large increases in profits, profit shares and inflation rates. A major controversy has developed among economists and in the media about whether this was largely caused by profit inflation, that is, by increases in the percentage mark-ups set by firms. The paper attempts to clear some confusions regarding the issue of profit inflation, dealing with its definitions and the complexities of its measures. In particular, it shows that increases in economic activity and increases in the relative cost of domestic or imported inputs will lead to an increase in realized profit margins even if percentage mark-ups remain constant. The paper also lists a series of factors that may mitigate the results of empirical studies that show an increase in the aggregate value of this percentage mark-up.

Keywords: *profit inflation, imported inflation, percentage mark-up, functional income distribution*

JEL codes: *D21, E11, E12, E25, E31*

1 INTRODUCTION

While inflation had been a major issue in the 1970s and 1980s, it seemingly had been tamed since the mid-1990s in most Western countries. Inflation had gone under the radar, except in countries such as Japan where the monetary authorities attempted to raise it, rather than lower it. However, as a follow-up to the COVID-19 crisis and the war in Ukraine, inflation has been back in the news, having risen much above the targets set by central banks. Some mainstream authors still believe that excessive money creation or excessive government deficits have created an excess-demand induced inflation with employers frantically searching for employees. By contrast, many observers think that the COVID-19 pandemic and the war in Ukraine, with their detrimental effects from lockdowns and bottlenecks in the supply chains of manufacturing and on agricultural and energy prices, have given a rising impulse to price inflation.

This latter belief is consistent with the post-Keynesian view that the rate of inflation changes essentially for reasons that arise from the cost side, as argued by Kalecki (1971), in particular the prices of imported inputs and the world prices of commodities such as oil, especially when these are subjected to fluctuations in the exchange rate. As Philip Arestis and Malcolm Sawyer (2005: 959) point out for instance, ‘inflationary pressures arise from, *inter alia*, conflict over income shares, and from cost elements, with the price of raw materials, especially oil, being the most important’.¹

1. The theory of conflicting-claims inflation, in its mainstream and post-Keynesian specifications, is reviewed in Lavoie (2024). Hein/Häusler (2024) also deal with the post-Keynesian conflictual inflation model, integrating its effect on employment.

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While recognizing the triggering effects of the rising world prices in commodities and raw materials (especially energy prices, in particular, oil prices²), the breakdown of some supply chains, the rise in transportation costs, and the sudden scarcity of semiconductor chips needed for manufacturing production, several left-wing and heterodox economists have argued early on that businesses did increase their profits, profit shares, profit margins or percentage mark-ups, thus causing additional rising pressures on inflation rates.³ This has been called profit inflation, profit-led inflation, mark-up inflation, seller's inflation or greedflation.

The possibility of profit inflation has also attracted the attention of a number of mainstream economists, including some working in banks or at the International Monetary Fund, as well as central bankers at the Fed, the European Central Bank (ECB) or other central banks such as the Bank of Canada.⁴ It has also attracted the attention of politicians. This concern with profit inflation by politicians and central bankers is surprising, at least at first sight, but after some reflection it does make sense. Politicians have been blamed by pundits and mainstream economists alike for having caused the boost in aggregate demand and inflation rates by creating overly large public deficits in their efforts to combat the economic consequences of COVID-19 and its lockdowns. And similarly, central bankers have also been blamed by pundits and mainstream economists for having created an excess supply of money by monetizing these deficits.⁵ Thus, by trying to put the blame on businesses, politicians and central bankers can save themselves from these accusations.⁶

One study that started the profit inflation tantrum, and which is almost always cited both by heterodox and some mainstream economists, is the one by Josh Bivens (2022), published in April 2022.⁷ Noting the increase in inflation rates since the second quarter of 2020, Bivens argued that 'strikingly, over half of this increase (53.9%) can be attributed to fatter profit margins, with labor costs contributing less than 8% of this increase. This is not normal'. And since an image is better than a thousand words, Bivens illustrated his

2. Breman/Storm (2023) argue that speculation in oil futures is responsible for increases in oil spot prices, and thus have been a driver of price increases in major food commodities.

3. See, as an early claim, the blog of Ilan Döğüs (2022): 'So the debate amongst heterodox as to the nature of current inflation seems to be quite clear, at least to me: there appears to be strong evidence that inflation is profit-driven'. A few heterodox economists have declined to jump on this bandwagon. Matías Vernengo and Esteban Pérez Caldentey (2023: 143) stuck to the explanation based on supply-chain problems and the shock to energy and food prices, adding that 'to blame corporations for increasing their profit margins ... also provides an incorrect explanation for the recent acceleration of inflation'.

4. Just to provide two references, there was a key statement by the president of the ECB. Christine Lagarde (<https://www.euractiv.com/section/economy-jobs/news/ecb-lagarde-says-corporate-profits-contributed-to-inflation/>), and for the IMF, see Hansen et al. (2023).

5. A somewhat different argument, which I accept, is that central bankers have kept interest rates too low for too long, an argument that can be made to explain asset price inflation, both real estate and financial assets. Ferguson/Storm (2023) add that the spending out of these capital gains probably contributed to the CPI inflation pressures.

6. In addition, central banks (Bank of England, the ECB, and the Bank of Canada) completely under-predicted inflationary pressures, making mistakes of two and four percentage points, respectively, in their one-quarter ahead and three-quarter ahead predictions of the actual inflation rate of the first quarter of 2022 (Rendell 2024).

7. For instance, in my home country, Jim Stanford (2023a), a well-known and well-articulated progressive Canadian economist, has argued on several occasions that corporate profits played a leading role in driving Canadian inflation, based on data relying on the same method as that of Bivens (2022).

claim by providing a figure showing clearly the difference between the new situation and the normal one, between 1979 and 2019, when labour costs and non-labour unit costs were the main contributors to the growth in unit prices of non-financial corporate firms.⁸

At about the same time, Isabella Weber was arguing in favour of selective price controls as an alternative to hikes in interest rates and as a way to fight against profit inflation, managing to attract the attention of mainstream media on this issue.⁹ The article by Weber/Wasner (2023) on the topic of profit inflation attracted my own attention. Weber's view is that there would have been some *amplification* by American firms of the increase in commodity costs that they had been subjected to because of the COVID-19 crisis and the war in Ukraine. Why this is so, as conveyed by Weber/Wasner (2023: 186, 191) is that 'publicly reported supply-chain bottlenecks and cost shocks can also serve to create legitimacy for price hikes and create acceptance on the part of consumers to pay higher prices, thus rendering demand less elastic Firms facing input shortages due to a supply-side bottleneck can be more aggressive about raising prices and thus may not only protect profit margins but expand them'.

This statement certainly looks reasonable, and similar statements can be found from various observers in the literature or on the web.¹⁰ For instance, Mark Setterfield (2023: 602) argues that the COVID-19 supply shocks 'have relaxed the "fairness constraints" on corporate pricing behavior, by creating sources of cost-based price increases that provide "camouflage" for firms, allowing them to increase markups (and hence prices) under the guise they are "merely" passing through cost increases'. It also so happens that a similar explanation has been provided in the past by another post-Keynesian. When inflation in industrialized countries was also a hot topic, 40 years ago, Peter Bird has argued that:

Firms will increase prices in response to cost increases only if they reasonably expect that their competitors will follow them. Publicity attached to cost increases this probability. Large cost increases attract more publicity than small cost changes.... The mark-up of price on cost depends upon its public and political acceptability; less opprobrium attaches to price increases for which there is an obvious exogenous explanation. Consequently, large publicised cost increases provide an opportunity for firms to increase their mark-ups, or to restore the effects of previous erosion. (Bird 1983: 38)

Thus, both Bird as well as Weber argue that firms are more likely to increase their mark-ups or profit margins when inflation is in the news, as it provides an excuse for raising prices.¹¹ The question that follows is whether this was actually the case, and how this can be assessed. The rest of the paper is devoted to the reasons for which the importance

8. I was myself confronted with the profit inflation view when in November 2022 I was asked to read the draft of a dissertation chapter written by Guillermo Matamoros Romero, then a doctoral student of my colleague Mario Seccareccia. The doctoral dissertation was successfully defended in September 2023, and the chapter gave rise to a publication (Matamoros 2023). The title of the chapter was: 'A post-Keynesian Institutional approach to mark-up inflation'. As I expressed some doubts over the reality of mark-up or profit inflation in a series of email exchanges with a couple of colleagues, I was hassled by Louis-Philippe Rochon to write about this for his blog, which I finally did in May 2023 (Lavoie 2023). This induced a number of comments and responses which gave rise to the present paper.

9. Among many others, see Carter (2023) in *Newsweek*.

10. Indeed, as an anecdote, a tennis partner of mine who happens to run a small business confided to me that in 2022 and 2023, in contrast to previous years, he did not have to explain anymore to his customers why he was increasing the prices of his products.

11. There is another similarity between Bird (1983: 37) and Weber/Wasner (2023: 208). They both argue that it would make sense to stabilize international commodity prices by constituting

or relevance of profit inflation may have been exaggerated. Besides definitional issues, I contend that increases in economic activity and increases in the relative cost of domestic or imported inputs will lead to an increase in realized profit margins even if percentage mark-ups remain constant. The paper also lists a series of additional factors that may mitigate the results of empirical studies that show an increase in the aggregate value of this percentage mark-up. I should emphasize that I provide no empirical assessment of my own. I rely on theoretical arguments and sometimes on the empirical work of others.

The next section is devoted to the possible consequences of omitting overhead labour costs and imported intermediate goods when assessing profit inflation. Section 3 deals with other features that may complexify the assessment of profit inflation. The conclusion sums up the arguments made in the main text.

2 AN OVERSIMPLIFICATION OF THE COST COMPONENTS

There was a lot of confusion, at least initially, about what the expression *profit inflation* meant. Sometimes authors implied a substantial increase in the amount of overall profits; other times they looked at the evolution of the profit share or profit percentage. Later on, there was more focus on the mark-up, but even then, it was not always clear whether one meant the absolute mark-up or instead the percentage mark-up over unit costs.¹² Then, speaking about unit costs, did one mean actual unit costs or unit direct costs, or normal unit costs? Thus, one had to make a distinction between the actual profit margin and the costing margin, as defined by Frederic Lee (1998: 109–110). In several later studies, the focus was, correctly, on the cost of goods sold (COGS), meaning direct costs. This measure allows to compute the gross costing margin, that is, the percentage mark-up, as we shall see below.

Besides these definitional issues, there are two main problems with using the profit share or the price to unit labour cost ratio to support the hypothesis of profit inflation. The first problem is that one must take account of overhead costs, and in particular overhead labour costs. I shall tackle this problem in the next subsection. The second problem is that there are intermediate goods: at the level of the firm one must consider that labour costs are not the only costs of firms; at the national account level, one must consider that some of these intermediate goods or raw materials are being imported. This second problem will be dealt with separately.

2.1 The omission of overhead costs

Let us first deal with the issue of overhead labour costs. Let us assume a fully vertically integrated economy, so that everything can be brought back to profits and labour costs. According to post-Keynesian theory as presented by Frederic Lee (1998), firms set prices either on the basis of unit direct costs or on the basis of unit normal costs, meaning here that prices depend on unit direct labour costs (*UDLC*) or on unit normal labour costs (*UNLC*).

buffer stocks, as suggested by Kaldor, since this proposal would help to contain inflationary pressures by avoiding large cost increases for domestic firms, and thus avoiding the amplification of these cost increases.

12. For instance, the following statement is ambiguous: ‘Some CEOs have admitted on shareholder calls and in surveys that they have been taking advantage of inflation to raise profit margins by increasing prices beyond what is needed to offset any increase in their input costs’ (Storm 2023: 250). It is not clear whether CEOs mean absolute mark-ups or percentage mark-ups.

To clarify the above, we can start with a standard mark-up pricing equation, based on unit direct costs, and thus omitting overhead labour costs. We have:

$$p = (1 + \theta)UDLC = (1 + \theta)w/\lambda_d \quad (1)$$

where p is the unit price, θ is a gross percentage mark-up, w is the nominal wage rate of direct labour and where λ_d is the labour productivity of direct labour.

In the post-Keynesian or Kaleckian framework, firms operate in the area where marginal costs or unit direct costs are constant. Thus, we can assume the same at the macroeconomic level, as long as firms with different unit costs share equally increases or decreases in economic activity. Taking into account overhead labour costs besides the direct labour costs will make the unit labour costs (ULC) endogenous to the level of output, here assessed by the rate of capacity utilization u . Calling f the ratio of overhead labour (or fixed labour) to direct labour when the firm operates at full capacity, and with σ the salary premium that overhead labour gets compared to the wage of direct labour, it can be shown (Lavoie 2022: 354) that the unit labour cost is equal to:

$$ULC = (1 + \sigma f/u)(w/\lambda_d) \quad (2)$$

Obviously, the higher the rate of utilization, the lower the unit labour cost, at least until full capacity is reached.

A number of earlier post-Keynesians have paid attention to overhead labour costs in the past, such as Tom Asimakopulos (1975), Donald Harris (1974), Bob Rowthorn (1981), not forgetting Elizabeth Brunner (1975) and Joseph Steindl (1979). While some authors, mainly neo-Goodwinians, deny the importance of overhead labour, their salaries now represent nearly half of the total wage bill even though they consistently only represent about 18 per cent of the labour force.¹³ Changes in the rate of utilization is thus likely to have a noticeable impact on the profit share. Assuming mark-up pricing, we can find the realized profit share π of the national accounts, making use of equations (1) and (2):

$$\pi = (p - ULC)/p = (\theta - \sigma f/u)/(1 + \theta) \quad (3)$$

Similarly, we can compute the realized price to unit labour cost ratio, sometimes called the profit percentage:

$$p/ULC = (1 + \theta)/(1 + \sigma f/u) \quad (4)$$

The evolution of the profit share as a function of the actual rate of capacity utilization is shown in Figure 1.

Obviously, we see that as long as firms keep their percentage mark-up constant, the profit share will rise whenever there is an increase in the rate of utilization. This will also be the case when firms set their prices on the basis of the unit normal labour cost ($UNLC$). Under this pricing rule, firms will compute the unit labour cost assuming that they operate at the normal rate of capacity utilization, that is at $u = u_n$.

$$p = (1 + \Theta)UNLC = (1 + \Theta)(1 + \sigma f/u_n)(w/\lambda_d) \quad (5)$$

13. According to data on supervisory and non-supervisory workers provided by Simon Mohun (2014) and estimated by Lavoie/Nah (2020). Of course, not all supervisory workers are part of the truly fixed labour force, since we do know that some managerial staff also get laid off in a recession.

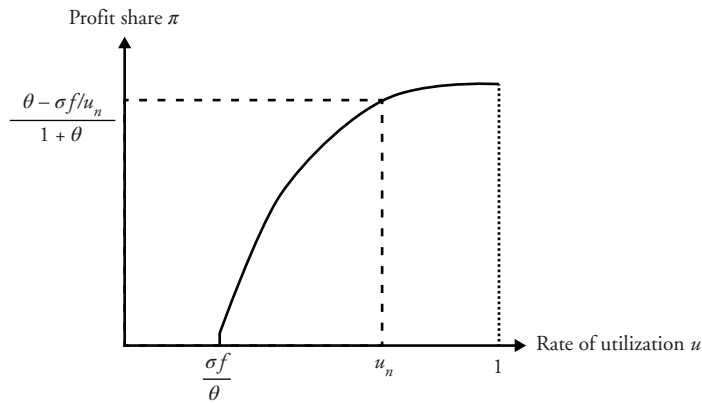


Figure 1 The profit share as a function of the rate of capacity utilization with overhead labour costs

where Θ is the net percentage mark-up over unit normal labour costs. This is the normal-cost pricing equation.¹⁴

This positive relationship between capacity utilization and the profit share has long been noted. Kalecki (1971: 75–76) made the same observation when paying attention to overhead salaries. It follows that an increase in the realized profit share or in the realized profit percentage is no proof of the actual behaviour of firms. One cannot claim that there has been profit inflation or greed inflation because there has been an increase in the profit share or in the price to unit labour cost ratio, because this increase may have been caused by an increase in sales or in the rate of capacity utilization. *A fortiori*, an increase in the overall value of profits is no indication of greed behaviour by firms, because an increase in sales at a constant price generates more profits both due to the increase in the number of units sold and due to the increase in the profit per unit sold.¹⁵

Indeed, a look at Table 1 shows that the COVID-19 pandemic in the USA (and presumably in most countries) was accompanied by low rates of industrial capacity utilization in 2020, and that this was followed by rising rates of capacity utilization in 2021 and 2022. This by itself could explain the fall, followed by a rise, in the observed profit share or in the profit percentage, without any change in the percentage mark-up.

Fluctuations in economic activity do generate cyclical changes in functional income distribution. Economic recoveries are normally associated with rising profit shares, as happened after the Global Financial Crisis, in 2009–2011, and as was eloquently shown for earlier business cycles by Tom Weisskopf (1979). Whether there is or is not profit inflation should instead be related to the behaviour of the percentage mark-up.¹⁶

14. The relationship between the rate of utilization and the profit share is also positive when normal-cost pricing is assumed. The profit share is then: $\pi = 1 - \frac{(1 + \sigma f/u)}{(1 + \Theta)(1 + \sigma f/u_n)} = \frac{\Theta(1 + \sigma f/u_n) + \sigma f(u - u_n)/uu_n}{(1 + \Theta)(1 + \sigma f/u_n)}$.

15. This dual effect is well illustrated in Lavoie (2022: 176, fig. 3.9).

16. Further implications of the existence of overhead labour, notably for the assessment of whether economies are profit-led or profit-squeezed, are discussed in Lavoie (2017). Empirical evidence regarding the importance of overhead labour and hence of cyclical labour productivity for assessing these issues can be found in Rolim (2019) and Cauvel (2023).

Table 1 Quarterly rates of capacity utilization, USA, Total industry, 2020–2023

| | | | |
|---------|------|---------|------|
| 2020 Q1 | 75.3 | 2022 Q1 | 80.0 |
| 2020 Q2 | 66.2 | 2022 Q2 | 80.6 |
| 2020 Q3 | 73.3 | 2022 Q3 | 80.7 |
| 2020 Q4 | 74.6 | 2022 Q4 | 79.9 |
| 2021 Q1 | 75.6 | 2023 Q1 | 79.6 |
| 2021 Q2 | 77.2 | 2023 Q2 | 79.4 |
| 2021 Q3 | 78.2 | 2023 Q3 | 79.5 |
| 2021 Q4 | 79.2 | 2023 Q4 | 78.9 |

Source: https://ycharts.com/indicators/us_capacity_utilization_total_industry#:~:text=Basic%20Info,long%20term%20average%20of%2080.04%25.

Nikiforos et al. (2024: 346) argue that the cyclical mechanism just described did not play any role during the COVID-19 crisis, because the profit share in the USA hardly fell when rates of utilization were low. But this lack of movement may be explained by changes in another component of pricing, which has been set aside for now, and which is the topic of the next subsection. Furthermore, due to the extraordinary changes in the composition of output, as will be discussed in Section 3, the cyclical behaviour of labour productivity and real wages was quite anomalous. In particular, whereas the growth rate of labour productivity falls in a recession and rises in the recovery, the opposite occurred during the COVID-19 crisis.¹⁷ This was no *ceteris paribus* experiment.

2.2 The omission of imported intermediate goods

There is a second problem with using the evolution of the profit share or of the price to unit labour cost ratio to assess whether or not there is profit inflation or profit greed. This second problem is that labour costs are not the only costs faced by firms. Firms also face material costs, in particular the costs of intermediate inputs. When these are produced domestically, they can be subsumed into profits and wages when looking at the national accounts. However, when they are imported, they must explicitly be considered in the pricing equation.¹⁸ To do so, we can rely on the formulation provided by Hein/Vogel (2008: 482) and inspired by Kalecki (1971: 62). Omitting normal overhead labour costs, they write out the mark-up price equation as being proportional to the sum of the unit direct labour cost and the imported unit material cost *UMC* :

$$p = (1 + \theta) \left(\frac{w}{\lambda_d} + e p_f v_m \right) = (1 + \theta)(UDLC + UMC) \tag{6}$$

where *e* is the nominal exchange rate, *p_f* is the price of the imported goods in the foreign currency, and *v_m* is the number of imported material inputs per unit of production. An increase in any of these three variables will induce an increase in prices. When dealing

17. See <https://www.bls.gov/news.release/pdf/prod2.pdf>.
18. Thus, as pointed out by Cucignatto et al. (2023: 262), if there is a scarcity of chips, while the firm purchasing domestically-produced chips will see that its material unit costs are rising, the domestic producer of the chip will enjoy an increase in its profits and its costing margin. I don't think that I 'failed' to grasp this in Lavoie (2023) as the authors allege, since I clearly stated that at the macroeconomic level one needed 'to assume that these material costs are entirely being imported'.

with data at the level of the firm, such as would be the case with Compustat data, the direct cost of intermediate inputs, whether imported or not, would enter into the definition of unit material cost UMC . Calling j the aggregate cost of imported materials to the wage bill, so that:

$$j = UMC/UDLC \quad (7)$$

the mark-up price equation can be rewritten as:

$$p = (1 + \theta)(1 + j)(w/\lambda_d) = (1 + \theta)(1 + j)UDLC \quad (8)$$

A breakdown in the supply chains, an increase in the cost of imported inputs due to a rise in the world prices of commodities and raw materials or due to depreciation of the domestic exchange rate (a rise in e) will thus lead to a rise in the value of the j variable if the imported unit material cost goes up faster than the unit direct labour cost, which is what happened presumably during the COVID-19 pandemic and as a consequence of the war in Ukraine. As a consequence, the profit share in value added will turn out to be:

$$\pi = \frac{\theta(1 + j)}{1 + \theta(1 + j)} \quad (9)$$

Thus, it follows that an increase in j , that is, an increase in the ratio of imported material unit costs to unit direct labour costs, will, in and by itself, generate a higher profit share, as can be verified by taking the derivative of equation (9) with respect to j :

$$\frac{d\pi}{dj} = \frac{\theta}{(1 + \theta(1 + j))^2} > 0 \quad (10)$$

The relationship is illustrated with Figure 2.¹⁹

The share of profits will rise if there is an increase in the relative cost of (imported) materials j , even if the percentage mark-up θ remains constant. Supporting the following equation, Castro-Vincenzi/Kleinman (2022: 42) find empirically that ‘the aggregate labor share mirrors the evolution of the relative price of materials in the US’. This is particularly the case in materials-intensive sectors. They also show that in countries where there is a

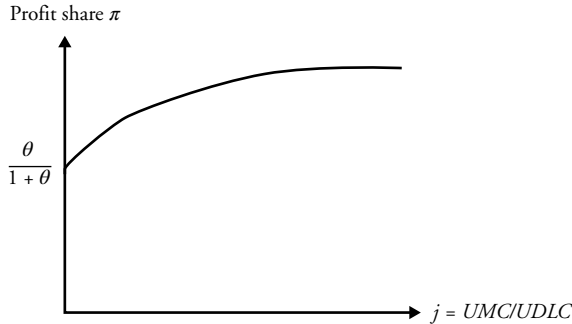


Figure 2 The profit share as a function of the relative material to labour unit cost

19. Storm (2023: 244–245) makes the same point with similar equations.

rise in the prices of materials and primary inputs, including energy, there is a rise in the share of profits in value added. The Kaleckian mark-up pricing equation provides a straightforward explanation of this observed direct relationship between the relative cost of imported materials and the profit share in value added.²⁰

If we wish, we can combine overhead labour costs and imported unit material costs, and compute the profit share as a function of the rate of utilization and the importance of these imported unit material cost relative to unit direct labour costs:

$$\pi = \frac{\theta(1+j) - \sigma f/u}{1 + \theta(1+j)} \quad (11)$$

Thus, to conclude this section, the rise in the profit share or in the price to unit labour cost that was observed as economies came out of the Covid pandemic could be explained by the rise in the relative cost of imported materials, and not necessarily by profit or mark-up inflation.

3 OTHER FEATURES THAT COMPLEXIFY THE ISSUE

3.1 A definitional issue

One consequence of taking into account the cost of imported intermediate commodities is that a rise in their relative cost will lead to a decrease in the real wage as long as firms keep a constant percentage mark-up. This can be seen by reversing equation (8), thus obtaining the real wage as:

$$\frac{w}{p} = \frac{\lambda_d}{(1+\theta)(1+j)} \quad (12)$$

When the increase in costs affects all firms, as would be the case of imported raw materials, the prices of which are determined in international markets, it is likely that firms will fully passthrough the cost increase to their customers instead of absorbing the additional cost. As Storm (2023: 249) warns, ‘constant profit mark-ups (in combination with higher energy prices) still contribute to inflation and have regressive distributional implications (as the profit share goes up and the wage share goes down)’. Should we consider that an increase in price inflation caused by an increase in the relative cost of imported materials ($\hat{j} > 0$), with a constant percentage mark-up ($\theta = \bar{\theta}$), is to be defined as profit inflation? Nikiforos et al. (2024) think so. They call this cost-push–profit-led inflation.

What they (implicitly) argue is that if firms had sufficiently reduced their mark-ups, then the increase in the imported unit material costs would have generated no additional inflation. With the real wage constant (here called $\bar{\omega}$), and no increase in unit direct labour costs, zero inflation would require the percentage mark-up to fall to a level given by:

$$\theta = \frac{\lambda_d}{\bar{\omega}(1+j)} - 1 \quad (13)$$

20. Storm (2023: 246) provides the reference to two studies conducted at the ECB and at a European Union institution that claimed to have found evidence of profit inflation based on calculations of the profit shares. As Storm points out regarding these studies, ‘because their analysis does not include the effects on the profit share of higher prices of intermediate (energy) inputs, they cannot infer anything concerning the role played by rising profit mark-ups’.

Thus, according to Nikiforos et al. (2024), if individual firms try to push back onto workers an increase in the cost of materials, or at the national account level if firms try to push back on workers an increase in the cost of imported materials, there is a form of profit inflation.²¹ Profit inflation is then redefined as a situation where firms refuse to see a fall in their percentage costing margins. In other words, there would be profit inflation if firms fully (or even partly) pass on cost increases instead of absorbing them.

Everyone is free to use their own definitions. Personally, I prefer to stick with the idea of profit-led inflation when percentage mark-ups on unit direct costs (labor and materials) are rising. Here, what we have is a kind of inflation barrier, to use Joan Robinson's (1956) terminology. Firms wish to achieve a certain percentage mark-up, presumably to achieve a given rate of return that will satisfy financial markets and that will allow them to finance capital accumulation.²² Firms will raise prices to take care of this reversed inflation barrier. As Robert Rowthorn (2024: 7) mentions when dealing with the UK situation, 'the typical firm, it seems, was able to pass on higher costs with a normal profit margin to the wage earning consumer. A result that would not have surprised Kalecki'.

Still, even an increase in the percentage mark-up may not qualify as profit inflation. Take for instance the case where there is an increase in the capital-to-capacity ratio (the degree of capital intensity), due to new techniques or a change in the composition of economic activity towards firms or industries with higher degrees of capital intensity? As long as firms set prices on the basis of normal-cost pricing, or more precisely on a target-return pricing procedure, this should induce an increase in the overall mark-up.²³ Is this profit-led inflation? I would tend to say no, as long as the rise in the mark-up would occur at a constant target rate of return.²⁴ Rowthorn (1981: 21) may have been right after all in wondering why his colleagues at the time 'focus their attention on the share of profits in output rather than the rate of profit.'

3.2 The heterogeneity of firms when assessing profit inflation

Let us assume that percentage mark-ups are correctly measured and assessed, as will be discussed in the next subsection. Could there be further elements that might mitigate the results of empirical studies that would provide evidence favouring profit inflation, meaning here increases in measured percentage mark-ups?

A few reasons could be advanced, tied to the heterogeneity of firms. An obvious explanation is that there are some industries in Canada and the USA that do produce commodities the prices of which are determined in world markets. With the world-wide increase in commodity prices from 2021Q2 to 2022Q4, these firms necessarily benefitted from bigger profit margins. 'Some evidence has shown that profits and profit margins have risen, but much of that has been in the oil and gas extraction, mining and quarrying, petroleum and coal product

21. In particular, it seems to be sometimes argued by profit-inflation advocates that if the absolute increase in the price is larger than the absolute increase in unit costs, then there is profit inflation, even when the percentage mark-up decreases. In this regard there is some ambiguity with the example given by Weber/Wasner (2023: 197, fn 9).

22. This is Wood's (1975) finance frontier, where the mark-up is related to the growth rate of the firm. Lavoie (2022: ch. 3) shows the relationship between the profit rate and the rate of return on equity (ROE).

23. This is also a point made by De Loecker et al. (2020) in their study to evaluate the causes of the trend rise of the aggregate mark-up using firm-level data: higher overhead and capital costs are expected to lead to higher percentage mark-ups. Kalecki (1971: 50) said the same.

24. See Lavoie (2022: 356) for a development of the relevant equation with target-return pricing.

manufacturing sectors or because of rising volumes rather than rising prices' (Faryaar/Leung 2023: 1). And why is this so? 'The increased profit levels in Canada can be traced to mining, oil and gas activities, including refining industries, where firms do not have market power because prices are set by global markets' (Faryaar et al. 2023: 2). I myself made a similar comment in my initial blog, noting that 'one can certainly acknowledge that some industries such as the oil industry have benefitted from higher profit margins, as explained by David MacDonald (2023) for Canada' (Lavoie 2023).

Percentage mark-ups have, however, according to some studies, also increased in a number of other industries. A second possible mitigating explanation based on heterogeneity can be attributed to Joseph Steindl (1952) and has been revived by Olivier Allain (2021). After a big recession, such as that during the COVID-19 episode, firms with small profit margins are likely to have gone bankrupt and hence their market share will be taken over by firms with higher costing margins. This could explain part of the rise in profit margins. 'Aggregate mark-ups could be driven by the exit of low-mark-up firms, or the reallocation of market share to firms with higher mark-ups' (Faryaar et al. 2023: 9).

A third explanation is related to the composition of demand. As shown by Marc Jarsulic (2022: 13), there has been a large shift in demand, from services towards durable goods. While both components fell by 20 per cent in real terms at the start of the COVID-19 crisis, in the recovery while real services expenditure had just barely recovered their 2019 level by mid-2022, real durable expenditure was 20 to 30 per cent above their 2019 level. A similar claim has been made by Brad DeLong (2023: 120). One may presume that percentage mark-ups are higher in the durable goods industries. Furthermore, assuming that Ferguson/Storm (2023: 5) are correct in claiming that 'the unprecedented gains in household wealth, particularly for the richest 10% of households, ... powered the recovery of aggregate U.S. consumption expenditure', this line of reasoning can be extended by asserting that these rich households are likely to have indulged in purchasing luxury goods that carry a higher costing margin than that of necessary goods. As anecdotal evidence of this, one only needs to look at the kind of cars which are now available in North America, with small cars being nowhere to be seen (their sales in Canada fell by 78 per cent since 2018), while large luxury SUVs (usually with higher profit margins) fill the parking lots of car dealers (sales of large vehicles went up by 163 per cent).²⁵ As a general statement, composition effects can really mess up aggregate measures, as was the case for labour productivity measures.

Finally, at least when dealing with profit measures, there is the question of how changes in the value of inventories must be accounted for. With inflation, the inventory valuation adjustment (IVA) of national accountants normally reduces the amount of NIPA profits. This is because stocks of intermediate goods and unsold finished goods are worth more at time t than they were worth at time $t - 1$. In Canada, the IVA (negative) peaked at 2022Q1 and 2022Q2 and was substantial throughout 2021 and 2022. Something similar can be said about the USA. Weber/Wasner (2023: 184) contend that 'profits without adjustments ... may be a more meaningful measure than profits with adjustments'. However, in Godley/Lavoie (2007: ch. 8), we have shown that profits from which IVA is subtracted is the most adequate measure of profits, as it yields a profit share that is identical to the hypothetical one with no inflation. With no IVA, profits are over-exaggerated. Thus, depending on how profits are measured, the increase in the profit margin or in the percentage mark-up may have been over-estimated.

25. See: <https://www-nocache.tvanouvelles.ca/2023/07/08/qui-a-encore-les-moyens-dacheter-une-voiture>.

3.3 Empirical studies based on cost of goods sold (COGS)

Gradually, researchers studying the possibility of profit inflation became more careful, being aware of the problems underlined in Section 2, and started to focus on the percentage mark-up, that is, the θ parameter of equation (8). The relevant studies are based on data measuring the cost of goods sold (COGS) relative to the value of sales, since the COGS essentially calculates the overall direct costs, including the unit cost of intermediate goods and raw materials (*UMC*), along with the cost of labour directly involved with production (*UDLC*). This kind of data ought to be the best measure of the evolution of the percentage mark-up.

A number of studies do estimate the evolution of the mark-up on the basis of the cost of goods sold. Sticking only with studies dealing with North America, some use purely accounting data, as does Storm (2023); others use the so-called production approach, inspired by De Loecker et al. (2020), as in Konczal/Lusiani (2022), Bilyk et al. (2023), Faryaar et al. (2023) and Davis (2023). The production approach assumes the existence of a Cobb–Douglas or CES production function, with output elasticities, rising marginal costs and counter-cyclical mark-ups. This is rather puzzling from a post-Keynesian point of view, and hence at first sight one would think that the estimates arising from such studies would not be very reliable, but Bilyk et al. (2023: 3) declare that their ‘results do not hinge on the estimates of output elasticities’, and so I will take this claim as factual.

Storm (2023: 256) concludes that ‘the empirical evidence for the U.S. shows that the increase in the American profit share is overwhelmingly caused by an increase in the mark-up’. A problem with this conclusion is that the starting point to measure the increase in mark-ups is the second quarter of 2020 when, as shown in Table 1, the rate of capacity utilization was at its lowest level. From the third quarter on, his Table 1 and his Figure 4 show that the evolution of the mark-up is flat, except for an upward blip in the fourth quarter of 2022. One would have thought that the starting point should have been 2019 or the first quarter of 2020. The study by Konczal/Lusiani (2022: 11), often cited by heterodox authors, using firm-level Compustat data, also concluded that ‘firms increased their mark-ups substantially in 2021’. By contrast, Leila Davis (2023), in the preliminary version of her paper for this journal, using similar Compustat data, but for US-only firms, wrote instead that ‘in the aggregate, firms maintained pre-pandemic mark-ups in 2020–22.’ If anything, and in apparent contrast to the market-power story, she claims that it is firms with low mark-ups that managed to raise them in 2020–2022.

In a study of the Bank of Canada, Bilyk et al. (2023: 2), using Compustat Canadian data, conclude that ‘the aggregate mark-up of all non-financial firms had been on an upward trend since 2015 and rose significantly at the beginning of the pandemic’. They note however that ‘this increase was mostly driven by firms in the commodities-related sectors’, whose prices are set in global markets. By contrast, they show that the mark-ups of firms in the consumer goods sectors did not increase, whether considering the retail, wholesale or manufacturing industries. Faryaar et al. (2023), using a different set of firm-level data, based this time on data produced by Statistics Canada, come to nearly opposite conclusions. They say that the mark-ups in the retail, wholesale and manufacturing sectors, except for the first two quarters of 2020, were higher in the post-pandemic period than they were in the pre-pandemic period. Bouras et al. (2023: 6), using the same data set, also found that mark-ups did increase, but they suggest that this may be due to ‘concerns about existing overhead costs and uncertainty about the possible length and depth of the pandemic and supply chain issues’.²⁶

26. The authors of all these Canadian studies agree, however, on the claim that ‘growth in mark-ups does not appear to be the main driver of recent inflation’, that its effect was mild at best, and that ‘mark-up growth was not aligned with the dynamics of inflation’ (Bouras et al. 2023: 2, 5).

Considering only these few studies, one must conclude that profit inflation is not a sure thing, and that there is certainly room for an empirical debate. It may be that the large drop in economic activity and rates of capacity utilization in 2020 did erode realized net profit margins, due to the impact of overhead costs.²⁷ As a consequence, as a catch-up response, firms in some industries may have been tempted to increase their percentage mark-ups, feeling somewhat protected by the widely publicized supply-chain problems and hikes in commodity and food prices.

A particularly interesting case is that of the oligopolistic retail food industry, which has been particularly targeted and accused of price gouging. Stanford (2023b) has shown that the profit share (net profit as a percentage of sales) of grocery retailers in Canada went from about 1.75 per cent in 2018–2019 to 3.00 per cent in 2021–2023. A similar increase in the profit share of the retail food industry, so I am told, has also occurred in France. There would thus be some apparent evidence that this sector has taken advantage of the crisis. On the other hand, Vincent (2023), from the Bank of Canada, has shown that grocery prices, with a lag, have risen in proportion to unit direct costs, thus providing some evidence that percentage mark-ups have not changed. What has happened, however, is that quantity sales have been much higher in 2020–2023 than they were before, thus leading to a reduction in unit overhead costs, with households purchasing more food in groceries and less in restaurants. In addition, the heads of grocery chains have contended that part of the bigger profits arose from an increase in sales of goods carrying higher mark-ups.²⁸ The food industry is thus a good illustration of all the difficulties arising when trying to assess profit inflation.

4 CONCLUSION

As Storm (2023: 244) has pointed out, ‘the debate on “profit inflation” is mired in conceptual unclarity, definitional idiosyncrasies and data problems’. The present paper is an attempt to bring some clarity, at least on the conceptual and theoretical front. Its main contribution is to insist that examining the evolution of the profit share or of the profit percentage is not an appropriate way to assess whether firms took advantage of the new inflation environment and thus amplified the increases in the costs of commodities and intermediate inputs that they have been subjected to due to the COVID-19 pandemic and the war in Ukraine.

There are two main reasons for dismissing the profit share as a relevant indicator of seller’s inflation. The first one is that, all else equal, the profit share has a positive relationship with economic activity or the rate of capacity utilization, due to the existence of overhead labour costs. The second reason is that a relative increase in the cost of imported inputs will mechanically increase the profit share even if the percentage mark-up is constant. It has been further argued that an appropriate way to define profit inflation is to look at whether the percentage mark-up has risen, instead of checking absolute mark-ups, profit shares or price to unit labour cost ratios. It was also tentatively alleged that empirical studies based on appropriate measures (the cost of goods sold) that show an increase in percentage mark-ups at the aggregate level may, at least in part, result from various composition effects tied to the heterogeneity of firms rather than price gouging or the lack of competition.

27. For instance, in the UK, the 240 biggest listed companies made profits of 326 and 480 million pounds in 2019 and 2021, but only 30 million pounds in 2020 (Unite 2022: 8).

28. See: <https://www.cbc.ca/news/business/grocery-price-analysis-1.6774669>.

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REFERENCES

- Allain, O. (2021): Heterogeneous unit labor costs and profit margins in an economy with vintage capital: an amended neo-Kaleckian model, in: *Journal of Post Keynesian Economics*, 44(4), 537–568.
- Arestis, P., Sawyer, M. (2005): Aggregate demand, conflict and capacity in the inflationary process, in: *Cambridge Journal of Economics*, 29(6), 959–974.
- Asimakopulos, A. (1975): A Kaleckian theory of income distribution, in: *Canadian Journal of Economics*, 8(3), 313–333.
- Bilyk, O., Grieder, T., Khan, M. (2023): Mark-ups and inflation during the COVID-19 pandemic, Staff Analytical Note 2023-8, Bank of Canada.
- Bird, P.J.W.N. (1983): ‘Tests for a threshold effect in the price-cost relationship, in: *Cambridge Journal of Economics*, 7(1), 37–53.
- Bivens, J. (2022): Corporate profits have contributed disproportionately to inflation. How should policymakers respond?, Economic Policy Institute, 21 April, URL: <https://www.epi.org/blog/corporate-profits-have-contributed-disproportionately-to-inflation-how-should-policymakers-respond/>.
- Bouras, P., Bustamante, C., Guo, X., Short, J. (2023): The contribution of firm profits to the recent rise in inflation, Staff Working Paper 2023-12, Bank of Canada.
- Breman, C., Storm, S. (2023): Betting on black gold: oil speculation and U.S inflation (2020–2022), in: *International Journal of Political Economy*, 52(2), 153–180.
- Brunner, E. (1975): Competitive prices, normal costs and industrial stability, in: Andrews, P.W.S., Brunner, E. (eds), *Studies in Pricing*, London: Macmillan, 18–34.
- Carter, Z. (2023): What if we’re thinking about inflation all wrong?, *Newsweek*, 6 June, URL: <https://www.newyorker.com/news/persons-of-interest/what-if-were-thinking-about-inflation-all-wrong>.
- Castro-Vincenzi, J., Kleinman, B. (2022): Intermediate input prices and the labor share, URL: <https://static1.squarespace.com/static/5fbd5c064c271a353f8a9840/t/6356d28b31815f2ea13c2f33/1666634394840/LaborShare.pdf>.
- Cauvel, M. (2023): The neo-Goodwinian model reconsidered, in: *European Journal of Economics and Economic Policies: Intervention*, 20(2), 183–246.
- Cucignatto, G., Garbellini, N., Fora-Alcade, F. (2023): Profit-led or cost-led inflation? Propagation effects through the EU inter-industry network, in: *PSL Quarterly Review*, 76(306), 261–276.
- Davis, L. (2023): ‘Profits and mark-ups during the post-Covid inflation shock in the U.S.: A firm-level lens’, 2023 FMM Conference, URL: https://www.imk-boeckler.de/data/downloads/OEA/Veranstaltungen/2023/v_2023_10_21_davis.pdf
- De Loecker, J., Eeckhout, J., Unger, G. (2020): The rise of market power and the macroeconomic implications, in: *Quarterly Journal of Economics*, 135(2), 561–644.
- DeLong, B. (2023): The first inflation problem of the twenty-first century, in: *Review of Keynesian Economics*, 11(2), 117–128.
- Dögüs, I. (2022): Market power and inflation, 5 July, URL: <https://medium.com/@monetarypolicyinstitute/market-power-and-inflation-ea917ac86f67>
- Faryar, H., Leung, D. (2023): ‘Inflationary pressures, wages and profits’, Statistics Canada, in: *Economic and Social Reports*, 3(6), 1–4.

- Faryaar, H., Leung, D., Fortier-Labonté, A. (2023): 'Mark-ups and inflation: evidence from firm-level data', Statistics Canada, in: *Economic and Social Reports*, 3(6), 1–11.
- Ferguson, T., Storm, S. (2023): Myth and reality in the Great Inflation debate: supply shocks and wealth effects in a multipolar world economy, in: *International Journal of Political Economy*, 52(1), 1–44.
- Godley, W., Lavoie, M. (2007): *Monetary Economics: An Integrated Approach to Credit, Money, Income, Production and Wealth*, Basingstoke, UK: Palgrave Macmillan.
- Hansen, N.-J., Toscani, F., Zhou, J. (2023): Euro area inflation after the pandemic and energy shock: import prices, profits and wages, IMF Working Papers 23/131.
- Harris, D.J. (1974): The price policy of firms, the level of employment and distribution of income in the short run, in: *Australian Economic Papers*, 13(22), 144–151.
- Hein, E., Häusler, C. (2024): Kaleckian models of distribution conflict, inflation, distribution and employment – a comparative analysis, Working Paper 225/2024, Institute for International Political Economy (IPE), Berlin School of Economics and Law.
- Hein, E., Vogel, L. (2008): Distribution and growth reconsidered: empirical results for six OECD countries, in: *Cambridge Journal of Economics*, 32(3), 479–511.
- Jarsulic, M. (2022): Effective inflation control requires supply-side policy, Political Economy Research Institute, URL: https://peri.umass.edu/images/jarsulic_PERI_Conf_WP.pdf
- Kalecki, M. (1971): *Selected Essays on the Dynamics of the Capitalist Economy*, Cambridge, UK: Cambridge University Press.
- Konczal, M., Lusiani, N. (2022): Prices, profits and power: an analysis of 2021 firm-level mark-ups, Roosevelt Institute, URL: https://rooseveltinstitute.org/wp-content/uploads/2022/06/RI_PricesProfitsPower_202206.pdf
- Lavoie, M. (2017): The origins and evolution of the debate on wage-led and profit-led regimes, in: *European Journal of Economics and Economic Policies: Intervention*, 14(2), 200–221.
- Lavoie, M. (2022): *Post-Keynesian Economics: New Foundations*, 2nd edn, Cheltenham, UK, and Northampton, MA, USA: Edward Elgar.
- Lavoie, M. (2023): Some controversies in the causes of the post-pandemic inflation, 14 May, URL: <https://medium.com/@monetarypolicyinstitute/some-controversies-in-the-causes-of-the-post-pandemic-inflation-1480a7a08eb7>.
- Lavoie, M. (2024): Conflictual inflation and the Phillips curve, in: *Review of Political Economy*, doi: 10.1080/09538259.2023.2294305.
- Lavoie, M., Nah, W.J. (2020): Overhead labour costs in a neo-Kaleckian growth model with autonomous non-capacity creating expenditures, in: *Review of Political Economy*, 32(4), 511–537.
- Lee, F.S. (1998): *Post Keynesian Price Theory*, Cambridge, UK: Cambridge University Press.
- MacDonald, D. (2023): 'Where are your inflation dollars going? Inflation broken down by profit, wages and industry', Canadian Centre for Policy Alternatives, URL: <https://policyalternatives.ca/sites/default/files/uploads/publications/National%20Office/2023/01/where-are-your-inflation-dollars-going%20%281%29.pdf>
- Matamoros Romero, G. (2023): Are firm mark-ups boosting inflation? A post-Keynesian Institutional approach to mark-up inflation in select industrialized countries, in: *Review of Political Economy*, <https://doi.org/10.1080/09538259.2023.2244440>
- Mohun, S. (2014): Unproductive labor in the U.S. economy: 1964–2010, in: *Review of Radical Political Economics*, 46(3), 355–379.
- Nikiforos, M., Grothe, S., Weber, J.D. (2024): Mark-ups, profit shares, and cost-push-profit-led inflation, in: *Industrial and Corporate Change*, 33(2), 342–362.
- Rendell, M. (2024): The Bank of Canada retools its economic forecasting for a future that does not look like the past, *Globe and Mail*, 19 January, URL: <https://archive.ph/Uh3GW#selection-2071.0-2071.97>
- Robinson, J. (1956): *The Accumulation of Capital*, London: Macmillan.
- Rolim, L.N. (2019): Overhead labour and feedback effects between capacity utilization and income distribution: estimations for the USA economy, in: *International Review of Applied Economics*, 33(6), 756–773.
- Rowthorn, R. (1981): Demand, real wages and economic growth, in: *Thames Papers in Political Economy*, (Autumn), 1–39.

- Rowthorn, R. (2024): 'The conflict theory of inflation revisited', in: *Review of Political Economy*, doi: 10.1080/09538259.2024.2332297
- Setterfield, M. (2023): Inflation and distribution during the past COVID recovery: a Kaleckian approach, in: *Journal of Post Keynesian Economics*, 46(4), 587–611.
- Stanford, J. (2023a): 'Profits, not wages, have driven Canadian inflation', Center for Future Work, 20 January, URL: <https://centreforfuturework.ca/2023/01/20/profits-not-wages-have-driven-canadian-inflation/>
- Stanford, J. (2023b): New data on continued record profits in Canadian food retail, Center for Future Work, 10 December, URL: <https://centreforfuturework.ca/2023/12/10/new-data-on-continued-record-profits-in-canadian-food-retail/>
- Steindl, J. (1952): *Maturity and Stagnation in American Capitalism*, New York: Monthly Review Press.
- Steindl, J. (1979): Stagnation theory and stagnation policy, in: *Cambridge Journal of Economics*, 3(1), 1–14.
- Storm, S. (2023): Profit inflation is real, in: *Paolo Sylos Labini Quarterly Review*, 76(306), 243–259.
- Unite (2022): Unite investigates: corporate profiteering and the cost of living crisis, URL: <https://www.unitetheunion.org/media/4757/unite-investigates-corporate-profiteering-and-the-col-crisis.pdf>.
- Vernengo, M., Pérez Caldentey, E. (2023): Price and prejudice: reflections on the return of inflation and ideology, in: *Review of Keynesian Economics*, 11(2), 129–146.
- Vincent, N. (2023): Understanding the unusual: how firms set prices during periods of high inflation, Remarks, 3 October, Bank of Canada, URL: <https://www.bankofcanada.ca/wp-content/uploads/2023/10/remarks-2023-10-03.pdf>.
- Weber, I.M., Wasner, E. (2023): Sellers' inflation, profits and conflict: why can large firms hike prices in an emergency, in: *Review of Keynesian Economics*, 11(2), 183–213.
- Weisskopf, T.E. (1979): Marxian crisis and the rate of profit in the postwar US economy, in: *Cambridge Journal of Economics*, 3(4), 341–378.
- Wood, A. (1975): *A Theory of Profits*, Cambridge, UK: Cambridge University Press.