

Conflictual inflation and profit inflation

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This short paper deals with conflictual inflation within the context of an open economy that imports intermediate goods and raw materials. It also attempts to clear some confusions regarding the topic of profit inflation, dealing with its definitions and the complexities of its measures.

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The purpose of the present paper is pedagogical: it purports to discuss the link between conflictual inflation and the recent inflation episode, including the controversies surrounding the concept of profit inflation which has attracted much attention.

2 Conflict inflation in the open economy and Covid inflation

2.1 The role of imported commodities and raw materials

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 of the Covid-19 crisis and the war in Ukraine, inflation is 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 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, with many of these commodities being imported, 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, 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, p. 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’. Conflictual inflation then also involves the evolution of the cost of imported goods, in particular imported materials, as Latin American economists know just too well.

How can we take into account the increase in unit costs caused by the breakdown in supply chains and the increase in the cost of imported inputs? Price setting must then incorporate the unit cost of material inputs – the unit material cost, UMC – in addition to the unit labour cost, ULC . At this stage, because there has been so much confusion between profit shares and percentage markups, one needs to be more careful. Markup pricing is based on unit *direct* labour costs, $UDLC$. With $j = UMC/UDLC$, that is the unit material cost relative to the unit direct labour cost, and with λ_d representing the productivity of direct labour, the pricing equation given by equation (1) then becomes:

$$p = (1 + m)(UDLC + UMC) = (1 + m)(1 + j)ULC = (1 + m)(1 + j)w/\lambda_d \quad (19)$$

At the level of the aggregate economy, domestically-produced raw materials are part of the domestic output and hence can be subsumed into wage costs and profits. Hence, at the aggregate level, UMC only represents the cost of *imported* materials, with $UMC = ep_f v_m$ thus depending on three components: the exchange rate e , the foreign price of material p_f and the imported material to output ratio v_m . Simplifying computations by writing again $\kappa = (1 + m)$ and adding that $J = (1 + j)$, price inflation may now be written as:

$$\hat{p} = \hat{\kappa} + (\hat{w} - \hat{\lambda}_d) + \hat{J} \quad (20)$$

We can thus identify the three possible sources of the increase in inflation that arose throughout the world, mostly in 2022: (i) an increase in the percentage markup m of firms; (ii) a rate of increase in nominal wages which was faster than that of labour productivity; (iii) a rate of increase in the unit cost of imported material inputs which was faster than that of labour. This increase itself depends on three factors: the amount of materials needed per unit of output, the world price of materials, and the exchange rate.¹

Several left-wing and heterodox economists argued early on that, besides the initial supply chain issues, businesses did increase their profits, profit shares, profit margins or percentage markups, thus causing additional rising pressures on inflation rates.² This has been called profit inflation, seller's inflation or greed inflation. The possibility of profit inflation has also attracted the attention of a number of mainstream economists, even some working at the Fed, the International Monetary Fund, the European Central Bank or other central banks. One study that started this view and which is almost always cited is the one by Josh Bivens (2022). And more recently Isabella Weber has been at the forefront of this view (Weber and Wasner 2023).

Coming back to our conflicting-claims theory of inflation, one must note that an increase in the value of j (thus with $\hat{j} > 0$), will lead to a fall in the target real wage set by firms as long as firms are intent to maintain their percentage markup m . Indeed, this is how conflictual inflation in an open economy is modelled in post-Keynesian works (Bastian and Setterfield 2020; Hein 2023, pp. 175-9). As a consequence, the actual real wage of workers is likely to be falling. From equation (19), we get:

(20)

¹ Conflict inflation in the open economy has attracted the attention of several scholars recently. See Morlin (2023) for instance.

² A few heterodox economists have declined to jump on this bandwagon. Matías Vernengo and Esteban Pérez Caldentey (2023, p. 143) stick 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'.

$$\frac{w}{p} = \frac{\lambda_d}{(1+m)(1+j)}$$

The above equation assumes that the percentage markup m remains constant. When the increase in costs affects all firms, as would be the case of imported raw materials, the prices of which are determined on world markets, it is likely that firms will fully passthrough the cost increase to their customers instead of absorbing the additional cost. 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 markup ($m = \bar{m}$), is to be defined as profit inflation? Michalis Nikiforos and Simon Grothe (2023) think so. They call this cost-push-profit-led inflation.

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

(21)

$$m = \frac{\lambda_d}{\bar{w}(1+j)} - 1$$

Thus, according to Nikiforos and Grothe, if individual firms try to push back on 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.³ Everyone is free to use their own definitions. Personally, I prefer to stick with the idea of profit-led inflation when percentage markups on unit direct costs (labor and materials) are rising. Regardless, this situation, where either the profit rate or the real wage must fall, is at the heart of conflictual inflation. In the mainstream view, this would simply be called a supply shock. Here, what we have is

³ 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 markup decreases.

a kind of inflation barrier, to use Robinson's terminology. Firms wish to achieve a given percentage markup, presumably to achieve a given rate of return that will satisfy financial markets and that will help them to finance capital accumulation. Firms will raise prices to take care of this reverse inflation barrier.

Still, even an increase in the percentage markup may not qualify as profit inflation. Take 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 markup. Is this profit-led inflation? I would tend to say no, as long as the rise in the markup would occur at a constant target rate of return.⁴ Rowthorn (1981, p. 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.'

2.2 Further complexities in assessing profit inflation

As mentioned earlier, the term profit inflation has caused considerable confusion, at least in the early stages of the discussions, besides the definitional problem discussed in the previous section. Profit inflation was sometimes said to be caused by rising profits. Obviously, if unit direct costs are constant in the short run, as presumed by post-Keynesians and verified by several studies, any increase in economic activity, as happened after the lockdowns, will lead to an increase in profits. Profit inflation was also sometimes said to be proven by the fact that the profit share had risen when the lockdown was lifted. But the (gross) share of profits, even if percentage markups are constant, will rise if there is an increase in the relative cost of imported materials j .⁵ This gross share of profits, making use of equation (19), will turn out to be:

⁴ See Lavoie (2022, p. 356) for a development of the relevant equation with target-return pricing.

⁵ Supporting the following equation, Castro-Vincenzi and Kleinman (2022) find 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 rise in the prices of materials and primary inputs, including energy, there is a rise in the share of profits in value added.

(22)

$$\pi^{gross} = \frac{m(1+j)}{1+m(1+j)} = \frac{M}{1+M}$$

Taking into account overhead labour costs besides the direct labour costs will make, in addition, the share of profits in value added sensitive 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, p. 357) that the net share of profits is equal to:

(23)

$$\pi^{net} = \frac{M - \sigma f / u}{1 + M}$$

At the macroeconomic level, as the economy recovers (the rate of utilization u rises), the presence of overhead labour costs explains that the profit share in value added will normally rise because of a fall in average unit labour costs, despite constant markup rates; similarly, during a recession, the profit share will decrease and the wage share will increase. This is exactly what happened during the second quarter of 2020, when the wage share rose by nearly 10 percentage points in Canada.⁶ The Covid episode demonstrates that 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. Whether there is or isn't profit inflation is thus instead related to the behaviour of the percentage markup m .

Several empirical studies have been done to assess the evolution of this percentage markup. 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

⁶ Marxists and neo-Goodwinians would have said that there was a 10% drop in economic activity *because* the high wage share was discouraging capitalists from producing. This is obviously a false conclusion in view of what we know about the cause of the fall in output in 2020.

the overall direct costs, including the cost of intermediate goods and raw materials, along with the cost of labour directly involved with production. Different studies, even looking at a given country, can provide diverging results,⁷ but as a rough generalization, we may say that there is mixed evidence that percentage markups rose in Europe (IMF, Bank of Italy), whereas there is clear evidence that they rose in the United States and in Canada (Weber and Wasner 2023; Storm 2023; Bouras et al. 2023), thus apparently contributing to the rise in inflation rates. There would thus have been some *amplification* by North American firms of the increases in commodity costs that they had been subjected to.

The dominant explanation, provided in particular by Weber and Wasner (2023, pp. 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.’

A similar idea had been expressed in the past by another post-Keynesian. It was claimed that stabilization of international commodity prices by buffer stocks, as suggested by Kaldor, a proposal also picked up by Weber and Wasner (2023, p. 208), would help to contain inflationary pressures, by avoiding large cost increases for domestic firms. Peter Bird (1983, p. 38) 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

⁷ For instance, in the case of Canada, Faryaar et al. (2023) find that the markup dropped considerably in 2020Q2, whereas Bouras et al. (2023) find that markup rose in that same quarter. Over the 2020-2022 period, both studies conclude that markups rose, but that they were not the main driver of inflation.

explanation. Consequently, large publicised cost increases provide an opportunity for firms to increase their mark-ups, or to restore the effects of previous erosion.

Regarding the last sentence, the large drop in economic activity and rates of capacity utilization in 2020 did erode profit margins, due to the presence of overhead costs, and may have tempted firms in some industries to increase their percentage markups as a response, feeling protected by the widely publicized supply-chain problems and hikes in commodity prices.

This being said, could there be other explanations for the measured increases in percentage markups since the Covid episode, or at least explanations that could mitigate an explanation relying on corporate greed? A first set of explanations is related 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 benefitted from bigger profit margins. '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, p. 2).

Percentage markups have, however, also increased in a number of other industries. A second possible 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 happened during the Covid episode, firms with small costing 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 markups could be driven by the exit of low-markup firms, or the reallocation of market share to firms with higher markups' (Faryaar et al. 2023, p. 9).

A third explanation is related to the composition of demand. As shown by Marc Jarsulic (2022), there has been a large shift in demand, from services towards durable goods. One may presume that percentage markups are higher in the durable goods industries. Furthermore, assuming that Tom Ferguson and Servaas Storm (2023) are

correct in claiming that the richest 10 per cent of households 'have powered the recovery of aggregate US 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 profit 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 (sales in Canada fell by 78% 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%). As a general statement, composition effects can really mess up aggregate 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 intermediary 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 and Wasner (2023, p. 184) contend that 'profits without adjustments ... may be a more meaningful measure than profits with adjustments'. However, in Godley and 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 markup may have been over-estimated.

Conclusion

The main purpose of the present paper has been to respond to the present revival in the theory of conflictual inflation. The paper has shown the difficulties that analysts meet when they try to justify the existence of a NAIRU. The last section of the paper deals with conflictual inflation within the context of an open economy that imports intermediate goods and raw materials. It allowed us to clear some confusions

regarding the assessment of whether or not our economies have been subjected to profit inflation, in particular by recalling that a relative increase in the cost of imported commodities will increase the profit share even if the percentage markup is constant. It has been further argued that an appropriate way to define profit inflation is to look at whether the percentage markup has risen, instead of checking absolute markups or profit shares. It was also tentatively alleged that empirical studies that show an increase in percentage markups at the aggregate level may, at least in part, result from composition effects rather than price gouging or the lack of competition.

While most heterodox economists have been quick to underline the detrimental effects of energy and food shocks on inflation and real wages, or to point the finger at corporations for having engineered increases in percentage markups and profit shares, one issue seems to have been left out of the inflation equation. It has been repeated again and again by friends and colleagues, and rightly so, that wages still have to catch-up with price increases. However, few seem to be cognizant of the fact that in Canada unit labour costs have risen by 5.1 and 6.8 per cent in 2021 and 2022, while they have risen by 2.5 and 6.2 per cent in the USA. Why is this so? Labour productivity in both countries has decreased in 2022, and keeps going down in early 2023. This corresponds to the $\hat{w} - \hat{\lambda}$ component of the price inflation equation. Surely this disappointing productivity performance must also explain part of the rising 2022 inflation rates, as pointed out by Steve Pressman (2023). Conflictual inflation, driven by wage catch-up as workers attempt to achieve their real wage targets and cover their past losses, may be the next step in the inflation process. This may be what central bankers are watching and it may explain why they don't seem overly keen to reduce interest rates. But if one believes in the various forms of the Kaldor-Verdoorn law, slowing down the economy is unlikely to solve the productivity puzzle....

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Appendix: Hein's (2023) wage and price equations⁸

In a section titled 'The Hein and Stockhammer approach', Hein (2023, p. 147) presents an alternative approach to the issue of conflictual inflation, which he contends to be based on 'plausible inflation expectations'. Using our own notations, but relying on the rate of employment e and his NAIRU-equivalent SIRE e^N , Hein starts with the wage inflation equation:

$$\hat{w} = \mu(e - e^N) + \hat{p}_{-1} \quad (\text{A.1})$$

Note that this implies that the indexation parameter is such that $\beta = 1$. He then contends that the price equation ought to be:

$$\hat{p} = \psi_2 \mu(e - e^N) + \hat{p}_{-1} \quad (\text{A.2})$$

This leads him to conclude that unexpected inflation \hat{p}^u , or the change in the inflation rate, is equal to the difference between actual employment and the SIRE, thus recovering the acceleration hypothesis:

$$\hat{p} - \hat{p}_{-1} = \hat{p}^u = \psi_2 \mu(e - e^N) \quad (\text{A.3})$$

But how does one move from (A.1) to (A.2)? Normally, we would have $\hat{p} = \hat{w}$ if there is a full passthrough of unit wage costs to prices, or else $\hat{p} = \psi_2 \hat{w}$, but here we have neither. It is as if the partial passthrough coefficient ψ_2 only concerns wage inflation arising from the current employment level and not increases in unit labour costs arising from historical factors (past inflation). Why would firms be able to fully incorporate into pricing wage increases when the increase is the same as those of the previous year, but not so when the increase in growth terms is bigger or smaller than in the previous year?

Assuming that $\hat{p} = \psi_2 \hat{w}$, we have instead of (A.2):

$$\hat{p} = \psi_2 [\mu(e - e^N) + \hat{p}_{-1}] \quad (\text{A.4})$$

⁸ This appendix is the result of an email exchange with Eckhard Hein and a longer email conversation with Franklin Serrano.

If the passthrough coefficient is such that $\psi_2 = 1$, we are back to a version of the accelerationist hypothesis, and e^N plays indeed a role equivalent to a NAIRU, since we then have:

$$\hat{p} - \hat{p}_{-1} = \hat{p}^u = \mu(e - e^N) \quad (\text{A.3}')$$

When the passthrough coefficient ψ_2 is smaller than unity, we get:

$$\hat{p} - \hat{p}_{-1} = \psi_2[\mu(e - e^N) - (1 - \psi_2)\hat{p}_{-1}] \quad (\text{A.4})$$

And hence in the long run, where $\hat{p} = \hat{p}_{-1}$, this formalization produces a standard Phillips curve, where the *level* of inflation depends positively on the level of employment, as shown in the equation below and the accompanying figure.

$$\hat{p} = \frac{\psi_2 \mu (e - e^N)}{1 - \psi_2}$$

There is no NAIRU or SIRE anymore. The variable e^N now only stands for the rate of employment that will generate zero inflation.

Figure A: Hein's ZISIDRE

A curious feature of this specification of equation (A.4) with $\psi_2 < 1$, as was pointed out to me by Serrano, is that wages grow faster than prices whenever the rate of employment e exceeds e^N (since $\hat{w} = \hat{p}/\psi_2$). With positive price inflation, real wages will keep rising; and reciprocally with price deflation, real wages will keep falling. Income distribution remains constant only with zero inflation. With this specification, e^N becomes instead a zero-inflation stable income distribution rate of employment, a ZISIDRE!