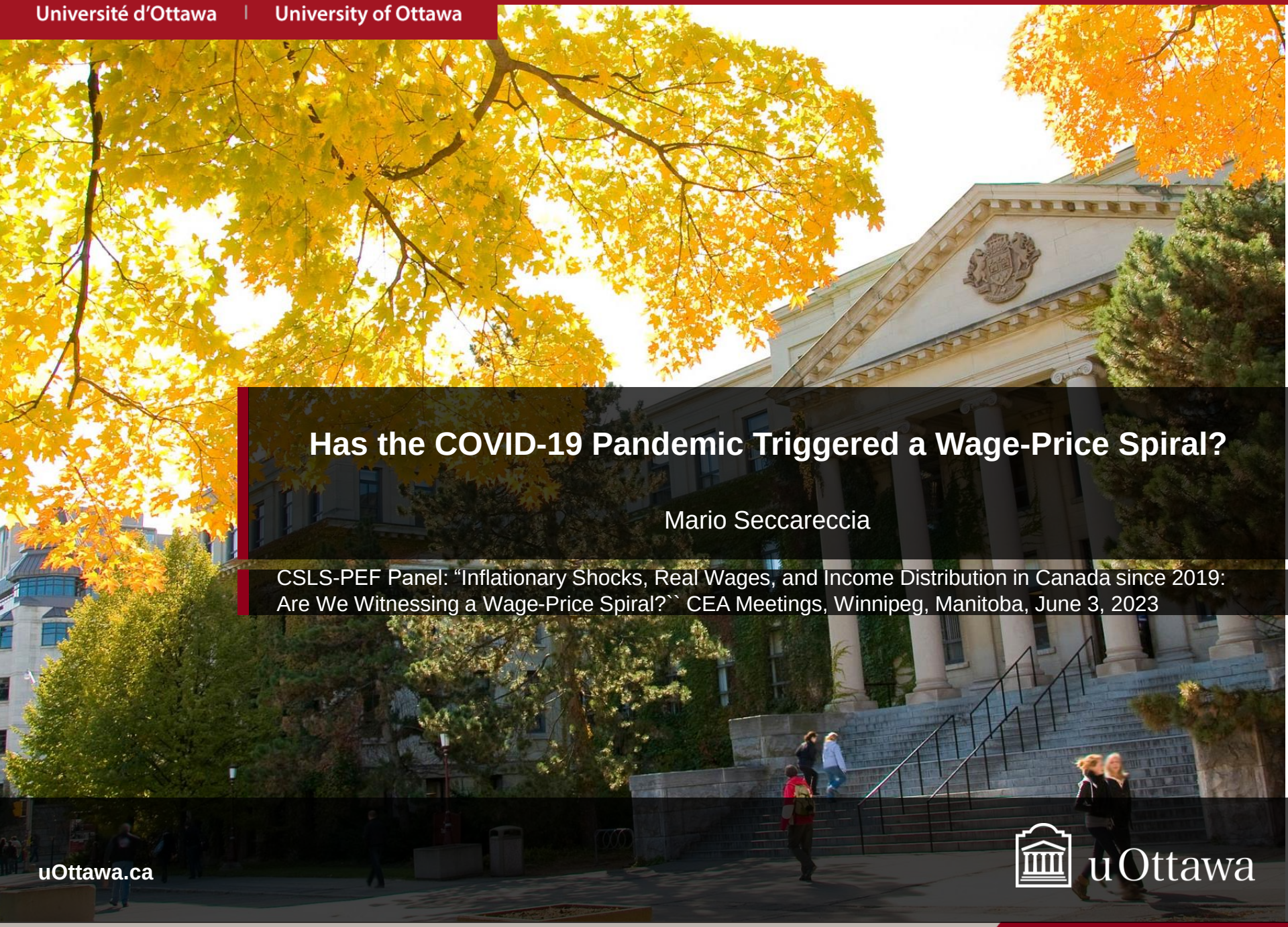

Has the COVID-19 Pandemic Triggered a Wage-Price Spiral?

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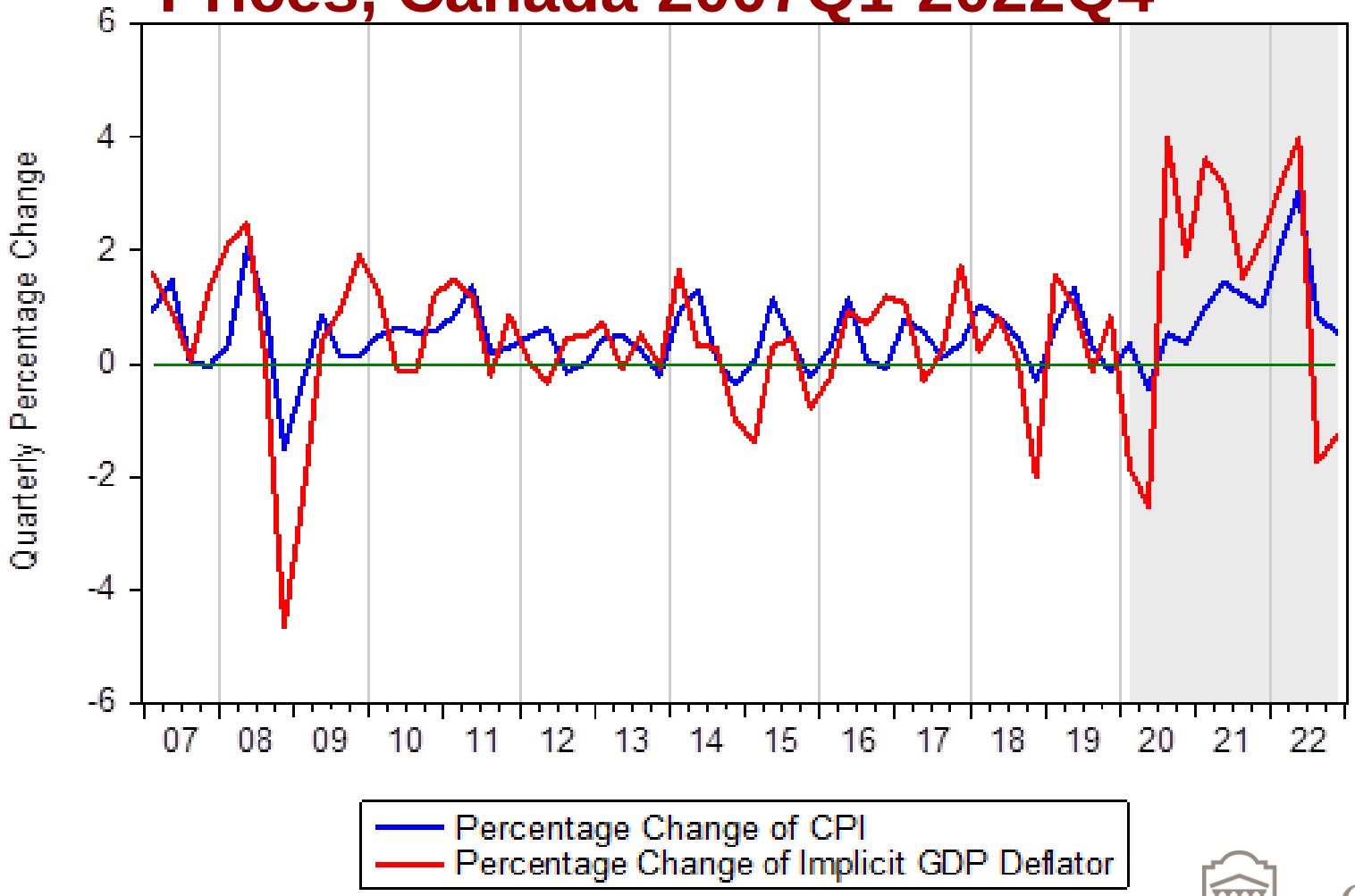
CSLS-PEF Panel: "Inflationary Shocks, Real Wages, and Income Distribution in Canada since 2019: Are We Witnessing a Wage-Price Spiral?`` CEA Meetings, Winnipeg, Manitoba, June 3, 2023

Introduction

- By the end of 2021 and throughout 2022, creeping inflation was, indeed, a "shock" to policy makers.
- Well into the COVID-19 pandemic and until the latter half of 2021, few believed that the accelerating inflation would be more than a temporary blip arising from supply-chain problems and the possible unintended de-globalization consequences resulting from recurrent shut-downs internationally.
- In Canada, although the bank rate had been very mildly rising until 2019, on March 27, 2020 the Bank of Canada slashed the overnight rate to its lowest level (i.e., the interest rate on positive settlement balances) down to 0.25 percent and pegged that rate at that level until the beginning of March 2022, while simultaneously launching officially its asset-purchase program of QE that lasted two years also until March 2022, when it then initiated QT.
- (See Fig. 1 below for the evolution of quarterly inflation rates).

Figure 1: Quarterly Percentage Change in Prices, Canada 2007Q1-2022Q4



Introduction

- At the beginning of 2022, the discourse among policymakers changed dramatically as the monetary authorities began to fear a "wage-price" spiral that, supposedly, might ensue from the accelerating inflation.
- Almost unprecedented historically, central bankers actually began overtly to beg workers to respond to the inflation "shock" by NOT demanding significant wage increases, especially as the inflation got a further boost in late February because of the war in Ukraine.
- For instance, already in early February 2022, Governor Andrew Baily of the BoE appealed to British workers to refrain from asking for inflation-matching pay rises, and he warned that there was a risk of inflation getting "out of control" and becoming "embedded". Jerome Powell and Tiff Macklem came out with similar appeals for "wage moderation" fearing a "wage-price" spiral, as this perception was reinforced by a series of tweets at the end of December 2022 by Olivier Blanchard.
- The question that I wish address here is: **Has there been a wage-price spiral necessitating central bank actions to increase interest rates?**

FIRST QUESTION: How Do We Define a Wage-Price Spiral and What Are Its Characteristics?

- Theoretical discussions over the concept of a "wage-price spiral" have a very long history.
- Although even before WWII (see Joan Robinson (1937)), F.A. Holzman (1950) was one of the earliest to theorize about a wage-price spiral under conditions of either full employment (FE) or, at less than FE, within a sectoral supply-constrained environment after WWII (the latter environment perhaps being somewhat analogous to the situation of supply bottlenecks faced since the 2021 economic recovery).
- According to F.A. Holzman (1950) a "wage-profit-price spiral" is "**an example of the inflationary pressures generated by changes in the distribution of income *between* and *within* all economic groups.**" (p. 152).
- For example, for the "between" distribution source: once there is an inflationary shock to the system that affects one group at the expense of another, $\boldsymbol{Y_t = P_tQ^* = W_t + \Pi_t + R_t}$, the response by other groups can potentially generate a wage-price spiral. This arises when the income claims $\boldsymbol{W/Y + \Pi/Y + R/Y > 1}$ resulting from some initial shock.

How Do We Define a Wage-Price Spiral and What Are Its Characteristics?

- Let us assume that there is a "shock" that raises either wages and the wage share ***W/Y*** or the profits share ***Π/Y***, as it occurred in 2020 and 2021 respectively. According to this logic, this can then potentially trigger a wage-price spiral:
- $\Delta w/w = \alpha \Delta P/P + OV_w$
- $\Delta P/P = \beta \Delta w/w + OV_p$
- $\Delta P/P = \beta[\alpha \Delta P/P + OV_w] + OV_p$ which says that, given the *OV*s, then the dynamics of the inflation, which becomes a simple solution to a difference equation, will depend on whether the compounding effect of the response parameters, such that: $\alpha\beta < 1$, $\alpha\beta = 1$, or $\alpha\beta > 1$.
- However, the *asymmetry* of the bargaining power reflected in a group's ability to respond quickly is critical. As pointed out by Blanchard (1986), if the speed of adjustment for one group prevents it from fully recapturing its loss systematically (because of delayed wage-price adjustment), then the spiral would not be an explosive one, that is that $\alpha\beta < 1$. This means that the inflation will eventually converge to some new equilibrium.

How Do We Define a Wage-Price Spiral and What Are Its Characteristics?

- Conversely, if we are dealing with a situation where the power of each group to effectuate change is more evenly balanced, then once the income claims $W/Y + \Pi/Y + R/Y > 1$, this system can easily generate an expansion of wages and prices either by achieving a new steady-state path after the initial shock (when $\alpha\beta = 1$) or it can become explosive (when $\alpha\beta > 1$).
- While these possibilities have been very much considered by economists historically, the vocabulary that currently prevails among central bankers is extremely imprecise, since the case of a situation of $\alpha\beta < 1$ ought not to be characterized a "wage-price spiral" if, for instance, the system can potentially converge back without the overt actions of governments and central banks.
- In fact, the current environment since 2021 has been one in which wages have fallen short of *fully* "catching-up" with prices.

How Do We Define a Wage-Price Spiral and What Are Its Characteristics?

- In addition to this inaccuracy of the vocabulary, there are other problems with virtually all of those research studies going back to WWII (including Blanchard's work). For instance, all these models have focused exclusively on the dynamics between ***W/Y*** and ***Π/Y*** and merely take ***R/Y*** to be a completely passive value that is determined residually.
- That is not completely so, especially with the emergence of IT regimes, in which central banks have become instruments to protect or raise rentier incomes! Through CB actions, interest rates can also play an "active" role of raising (and *not* reducing) inflation by seeking to enhance the rentier claim. Here is a quote from StatsCan on last month's CPI increase of 4.4% in the overall CPI by highlighting this element:
- **"Shelter costs rose 4.9% on a year-over-year basis in April, after a 5.4% increase in March. Canadians continued to pay more in mortgage interest cost in April (+28.5%) compared with April 2022, as more mortgages were initiated or renewed at higher interest rates. The higher interest rate environment may also be contributing to rising rents in April 2023 (+6.1%) by stimulating higher rental demand."**
  https://www150.statcan.gc.ca/n1/daily-quotidien/230516/dq230516a-eng.htm

How Do We Define a Wage-Price Spiral and What Are Its Characteristics?

- Before looking at some data, let me summarize my argument: inflation is essentially the outcome of conflicting claims (***W/Y + Π/Y + R/Y > 1***) recognized by many economists historically (outside of old quantity theorists), including some mainstream economists like Olivier Blanchard, for instance, within the framework of his WS/PS model.
- The use of the term "wage-price spiral" (as if inflation were out of control) should not be a term applicable to a situation, such as the one that we have witnessed since 2021 with presumably ***αβ < 1*** because labour has just been struggling to "catch-up" and, some would argue, it has not yet fully succeeded in getting back to the situation prior to the pandemic, since wages have grown less quickly than prices for most of the period since the recovery in 2021.
- Moreover, since March 2022, there are in reality **three** (not two) conflicting claims. Central banks play a direct role and take sides in the struggle by strategizing to suppress wage demands while seeking to re-establish the rentier share. Since March 2022, why can one not just as easily refer to a "*rentier* price spiral" resulting from interest-rate setting?

What Has Happened to the Share of Labour during the So-Called Wage-Price Spiral?

- Figure 2 below displays the evolution of the index of the share of labour since 2007 (with 2012=100).
- Every time there was a recession, we witnessed a significant rise in the share of labour. This is for at least two reasons: (1) business firms tend to retain the more highly skilled workers (including what Kalecki referred to as overhead labour) even as production falls; and (2) they lay off workers at the bottom of the wage scale, usually in accordance with seniority districts. In addition, (3) at the beginning of the pandemic, manufacturing and low-wage services were impacted even more so than high-income services, which were retained and shifted to telework.
- Hence the huge jump in the share of labour reflects this largely **compositional** effect, which then fell once the economy began to reopen later in 2021. Why did it continue to fall after 2021?

Figure 2: Evolution of the Share of Labour Income out of Current Dollar Output, Canada, Quarterly Observations, 2007-2022

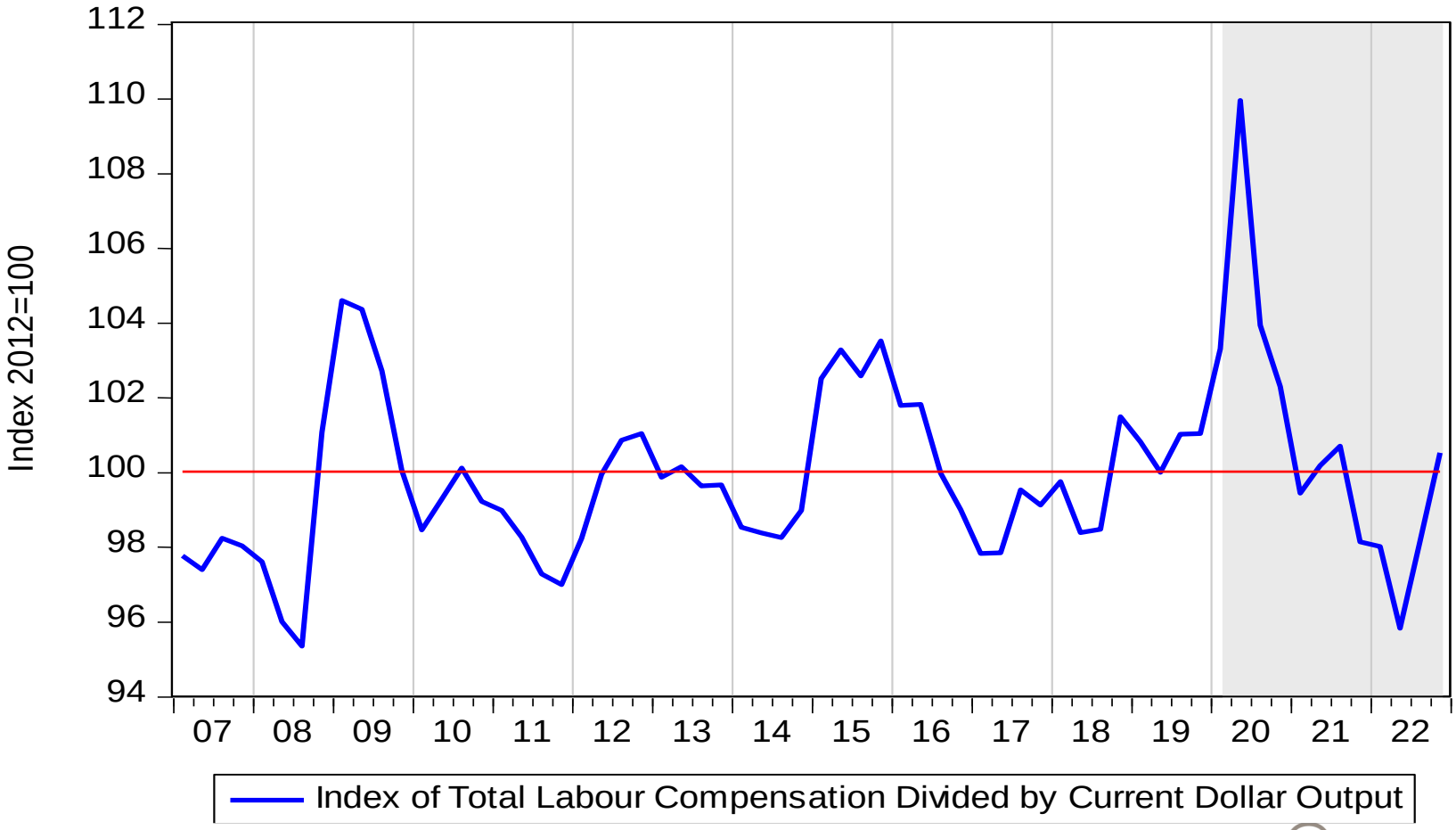


Figure 3: Evolution of Growth Rates of Average Labour Productivity and the Real Wage (Faced by Firms), Canada, Quarterly Observations 2007-2022

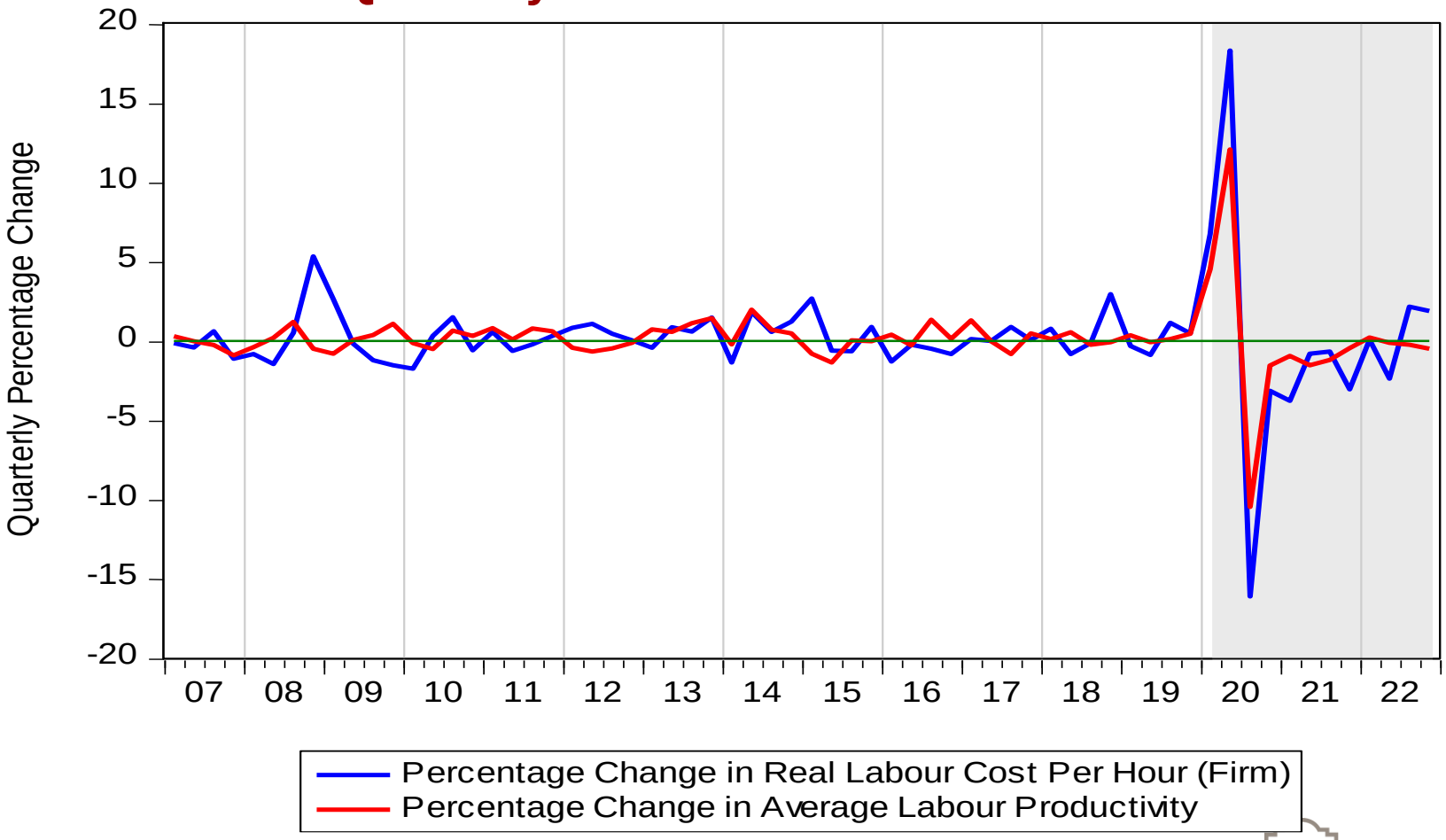
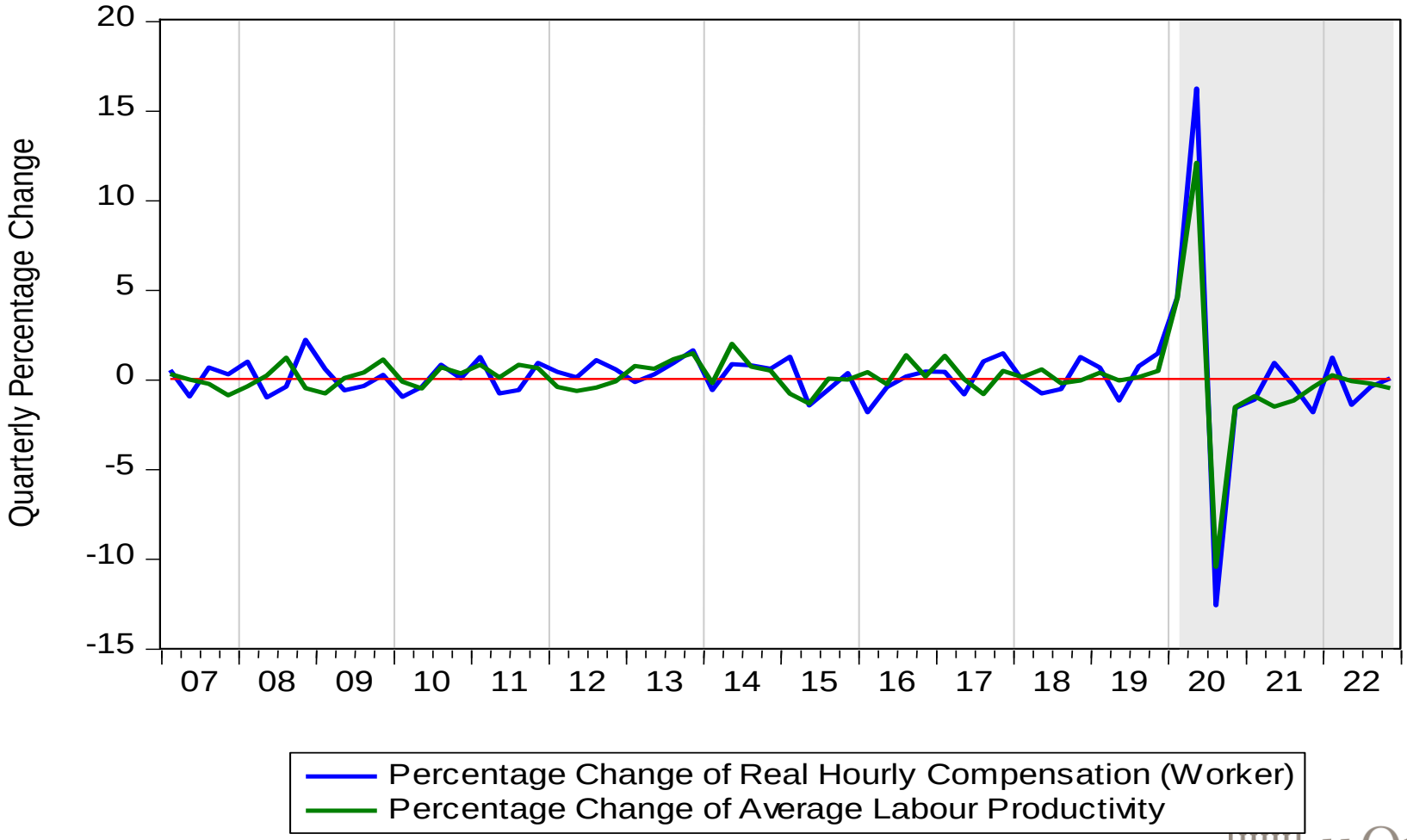


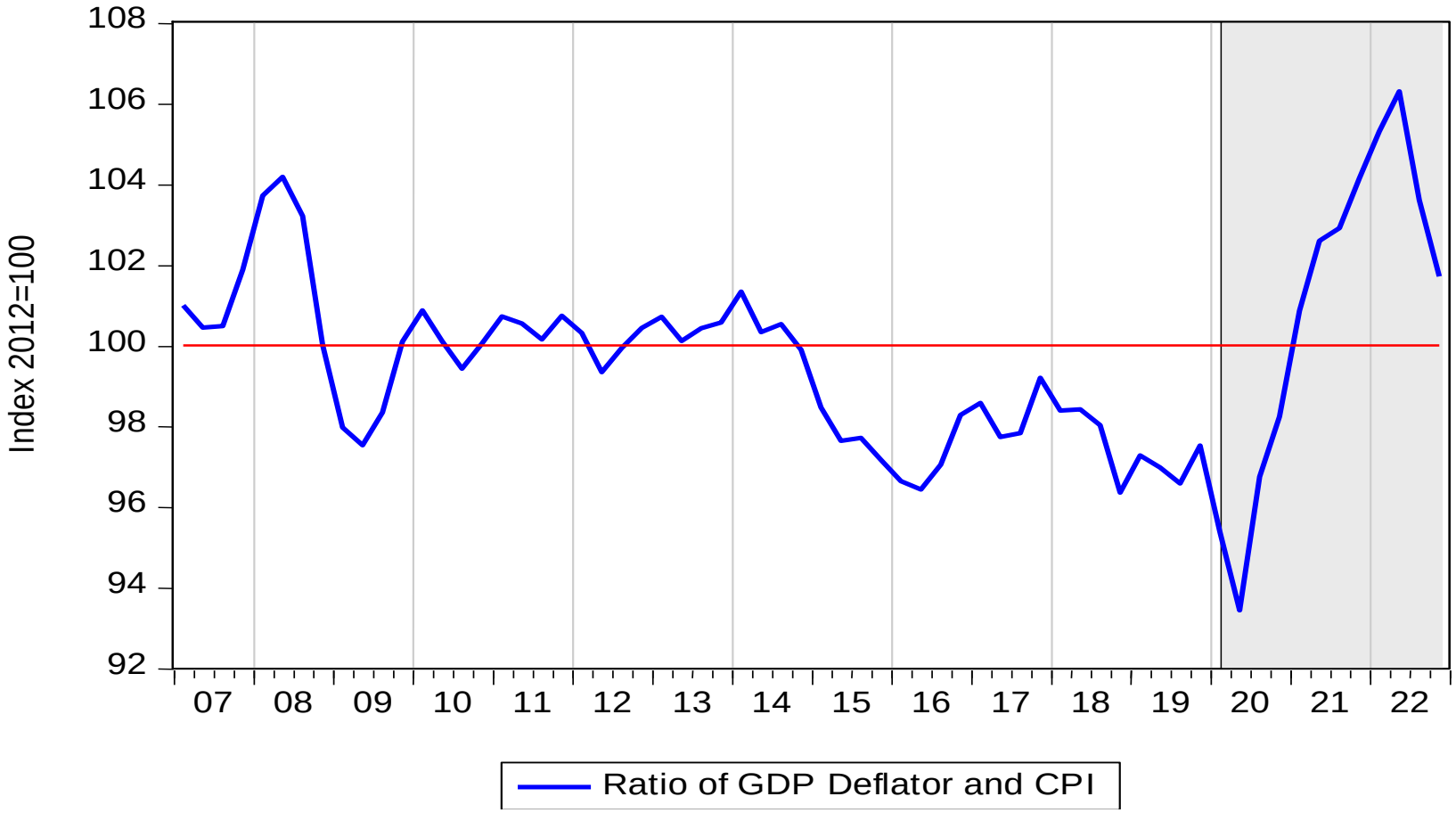
Figure 3: Evolution of Growth Rates of Average Labour and Real Wage to Workers, Canada, Quarterly Observations 2007-2022



The CSLS Concern with the Firm-to-Worker Terms of Trade: Was the Reversal Important during the Pandemic?

- In a study by Uguccioni, Sharpe and Murray (2016), they raised what seemed to be an important issue since to get a measure of the real wage, we deflate by the CPI, but when we measure the share of labour the real wage is deflated by the output deflator.
- **"…, the term "labour's terms of trade" refers to the ratio of output price Py to the consumer price Pc. These average prices differ because, in general, the bundle produced in the domestic economy. Workers produce output and receive compensation for their labour services, which is used to buy consumer goods. If consumer prices rise relative to output prices, workers' purchasing power falls compared to what it would have been if both consumer prices rose at the same rate as output prices. We would refer to such a situation as a deterioration in labour's terms of trade." (Uguccioni et al. 2016, pp.21-22)**
- It's not clear to me what the consequence of what happened during the pandemic matter when there was a short period of reversal.

Figure 4: Evolution of Firms-to-Workers Terms of Trade, Canada, Quarterly Observations (2012=100), 2007-2022



Some Recent Studies of Wage-Price Spirals: Alvarez et al. (2022)

- In a study by Alverez, et al. at the IMF in November 2022, when studying 79 similar historical inflationary records as the recent one, they found that these initial inflationary shocks were on average followed by an increase in wage growth, but not a wage-price spiral so that $\alpha\beta < 1$.
- "**Wage-price spirals, at least defined as a sustained acceleration of prices and wages, are hard to find in the recent historical record. Of the 79 episodes identified with accelerating prices and wages going back to the 1960s, only a minority of them saw further acceleration after eight quarters. Moreover, sustained wage-price acceleration is even harder to find when looking at episodes similar to today, where real wages have significantly fallen. In those cases, nominal wages tended to catch-up to inflation to partially recover real wage losses, and growth rates tended to stabilize at a higher level than before the initial acceleration happened. Wage growth rates were eventually consistent with inflation and labor market tightness observed. This mechanism did not appear to lead to persistent acceleration dynamics that can be characterized as a wage-price spiral.**" Alvarez, Bluedorn, Hansen, Huang, Pugacheva, and Sollaci (2022, p. 18).

Study by Bernanke and Blanchard (2023): Wage Growth Regression (2020Q1-2023Q1)

gw = growth in employment cost index; v/u = vacancy/unemployment ratio; catch up = Losses to workers' purchasing power due to inflation, measured by the four-quarter average of CPI inflation minus the one-year inflation expectation four quarters earlier. cf1 = one-year inflation expectations; and gpty = trend productivity growth

Conclusion: the catch-up effect is small and statistically insignificant.

Table 2. Wage growth regression: Dependent variable = *gw*

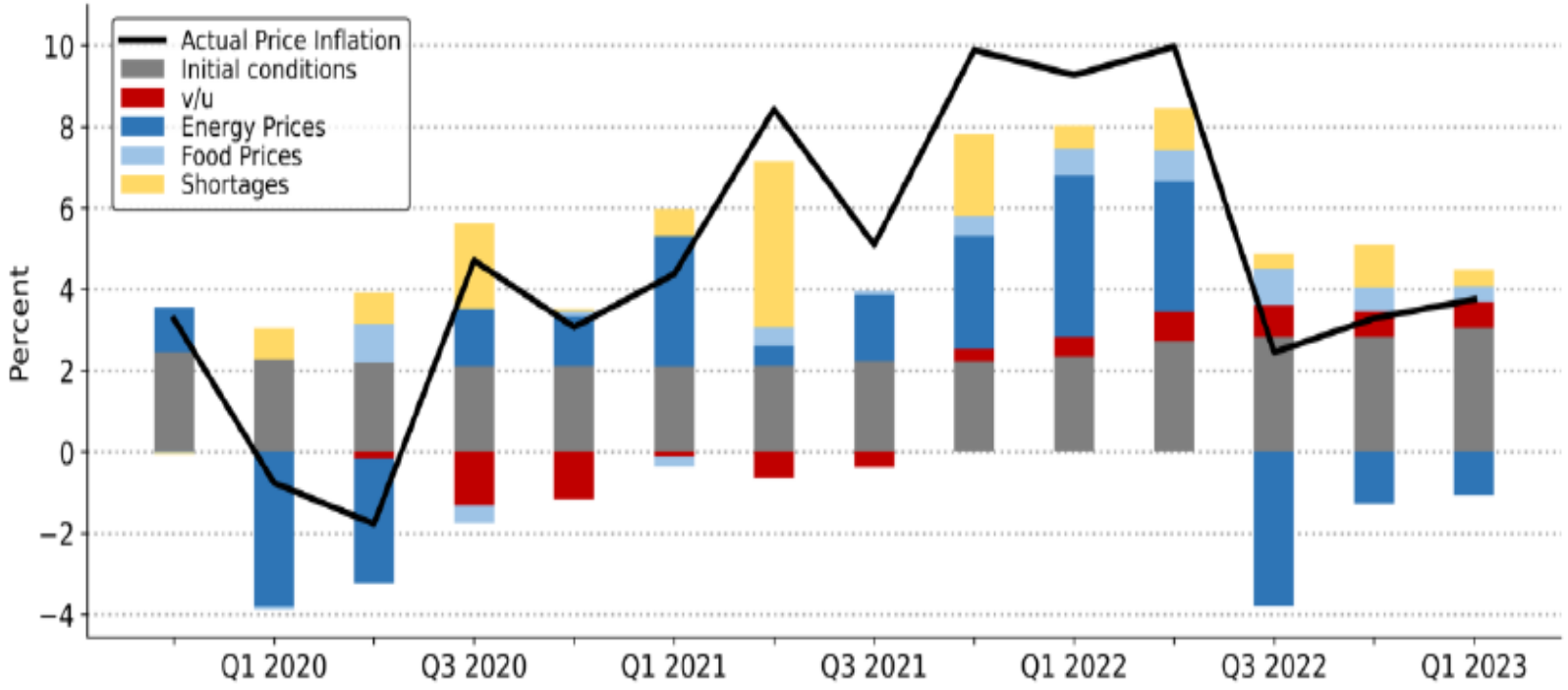
Independent variable	gw	v/u	catch-up	cf1	gpty
Lags	-1 to -4	-1 to -4	-1 to -4	-1 to -4	-1
Sum of coefficients	0.460	0.693	-0.024	0.540	0.031
p-stat (sum)	0.008	0.030	0.765	0.002	0.608
p-stat (joint)	0.071	0.023	0.994	0.022	0.608
R-squared			0.583		
No. observations			120		

Some Recent Studies of Wage-Price Spirals: Bernanke and Blanchard (2023)

- Conclusion from Bernanke and Blanchard (2023):
- "**Although the Phillips curve was operative, inflation expectations did not de-anchor and there was little evidence of a wage-price spiral, in that workers did not achieve nominal wage gains sufficient to compensate them for unexpected price increases (a weak catch-up effect). Our decomposition of inflation shows that tight labor markets alone made only a modest contribution to inflation early on.**" (p. 38).

Bernanke & Blanchard (2023): Decomposition and Sources of Price Inflation Decomposition for the Period 2020Q1 to 2023Q1

FIGURE 12. THE SOURCES OF PRICE INFLATION, 2020Q1 to 2023Q1



Bernanke & Blanchard (2023): Decomposition and Sources of Wage Inflation

FIGURE 13. THE SOURCES OF WAGE INFLATION, 2020Q1 to 2023Q1