

Why Do People Dislike Inflation?

Wage Erosion and Conflict

Bank of Portugal and Bank of Spain Workshop in Labour Economics

Joao Guerreiro¹ Jonathon Hazell² Chen Lian³ Christina Patterson⁴

May 22, 2024

¹UCLA ²LSE ³UC Berkeley ⁴Chicago Booth

Why do People Dislike Inflation?

Surveys: people dislike inflation because they believe it **erodes real wages**

[Shiller 97; Stantcheva 24]

“the concerns people mention first regarding inflation are that it hurts their standard of living” — Shiller (1997)

“The predominant reason for people’s aversion to inflation is the widespread belief that it diminishes their buying power” — Stantcheva (2024)

Why do People Dislike Inflation?

Surveys: people dislike inflation because they believe it **erodes real wages**

[Shiller 97; Stantcheva 24]

“the concerns people mention first regarding inflation are that it hurts their standard of living” — Shiller (1997)

“The predominant reason for people’s aversion to inflation is the widespread belief that it diminishes their buying power” — Stantcheva (2024)

Literature: small costs of inflation via wage erosion since wages **catch up with prices**

- Recent empirical literature [e.g. Cardoso et al., '22; Del Canto et al., '23; Pallotti et al., '23]
- “Textbook view” [e.g. Mankiw '20]

Why do People Dislike Inflation?

Surveys: people dislike inflation because they believe it **erodes real wages**

[Shiller 97; Stantcheva 24]

“the concerns people mention first regarding inflation are that it hurts their standard of living” — Shiller (1997)

“The predominant reason for people’s aversion to inflation is the widespread belief that it diminishes their buying power” — Stantcheva (2024)

Literature: small costs of inflation via wage erosion since wages **catch up with prices**

- Recent empirical literature [e.g. Cardoso et al., '22; Del Canto et al., '23; Pallotti et al., '23]
- “Textbook view” [e.g. Mankiw '20]

How to reconcile these two views?

This Paper

Motivating survey evidence: workers get nominal wage growth though **costly conflict** w/ firms

[E.g. tough conversations with employers; union strike; soliciting offers from other firm]

This Paper

Motivating survey evidence: workers get nominal wage growth though **costly conflict** w/ firms

[E.g. tough conversations with employers; union strike; soliciting offers from other firm]

“Menu cost” model for wage setting:

[Alvarez et al '16]

- Workers consider costly conflict w/ firm to raise nominal wage

[+ idiosyncratic shocks]

This Paper

Motivating survey evidence: workers get nominal wage growth though **costly conflict** w/ firms
[E.g. tough conversations with employers; union strike; soliciting offers from other firm]

“Menu cost” model for wage setting: [Alvarez et al '16]
• Workers consider costly conflict w/ firm to raise nominal wage [+ idiosyncratic shocks]

Analytical results: [Auclert et al '21]
• **Wage catch up** after inflation due to **costly conflict**, doesn't raise workers' welfare
• On the margin: cost of conflict offsets benefit of wage catch-up [envelope theorem]
• Impact of inflation on worker welfare determined by **wage erosion**
• How inflation would lower real wage if worker's conflict decision does not move with inflation

This Paper

Motivating survey evidence: workers get nominal wage growth though **costly conflict** w/ firms
[E.g. tough conversations with employers; union strike; soliciting offers from other firm]

“Menu cost” model for wage setting: [Alvarez et al '16]
• Workers consider costly conflict w/ firm to raise nominal wage [+ idiosyncratic shocks]

Analytical results: [Auclert et al '21]
• **Wage catch up** after inflation due to **costly conflict**, doesn't raise workers' welfare
• On the margin: cost of conflict offsets benefit of wage catch-up [envelope theorem]
• Impact of inflation on worker welfare determined by **wage erosion**
• How inflation would lower real wage if worker's conflict decision does not move with inflation

Reconciling two views: costs of inflation via **wage erosion** despite **catch up** of wages
• Real wages do not fully capture welfare cost of inflation in the labor market

Additional survey evidence to quantify and validate mechanism:

1. Cost of conflict $\approx 1.75\%$ of wages
2. Wage erosion: 1 p.p. \uparrow inflation $\Rightarrow \sim 0$ p.p. \uparrow nominal wage growth absent conflict
3. Inflation leads to conflict: 1 p.p. \uparrow inflation $\Rightarrow 1.5$ p.p. \uparrow prob. of worker conflict

Calibrated model:

- Costs of inflation to workers ≈ 3 times larger than implied by path of real wages

Costs of inflation. [Lucas '00; Alvarez et al '16; Nakamura et al '18; Friedman '77; Binetti et al '24]

- Previous: small costs during moderate inflations from range of mechanisms
[e.g. shoe leather costs, resource misallocation, inflation volatility]
- This paper: larger costs of inflation via wages

Costs of inflation via wages. [Shiller '97; Stantcheva '24; Hadjini et al '22; Pilossoph & Ryngaert '23; Del Canto et al '23; Ferreira et al '23; Pallotti et al '23]

- This paper: real wage growth misses costs of inflation due to conflict

Inflation and Conflict. [Lorenzoni & Werning '24 a,b]

- This paper: related but distinct notion of conflict – workers take costly actions to renegotiate wages
- Focus on normative instead of positive implications

Outline

Survey Design

Motivating Evidence: Nominal Wage Growth with Inflation

The Impact of Inflation on Workers: A Framework

Measuring Costs of Conflict with Survey

Quantitative Analysis

Beyond hand-to-mouth

Conclusion

Thank you

- Survey: **Prolific**
- 3000 prime-age, employed US workers
- **Representative** of the general population in terms of chosen **observable characteristics**
 - gender, education and political affiliation
- **In paper:** replicate Shiller & Stantcheva—“wage erosion” main perceived cost of inflation
- **Now:** evidence to motivate model
 - Workers achieve wage growth though costly conflict with employers
- **Later:** survey evidence to quantify and validate model

Representation

Outline

Survey Design

Motivating Evidence: Nominal Wage Growth with Inflation

The Impact of Inflation on Workers: A Framework

Measuring Costs of Conflict with Survey

Quantitative Analysis

Beyond hand-to-mouth

Conclusion

Thank you

Motivating Evidence: Nominal Wage Growth with Inflation

Motivating evidence from survey:

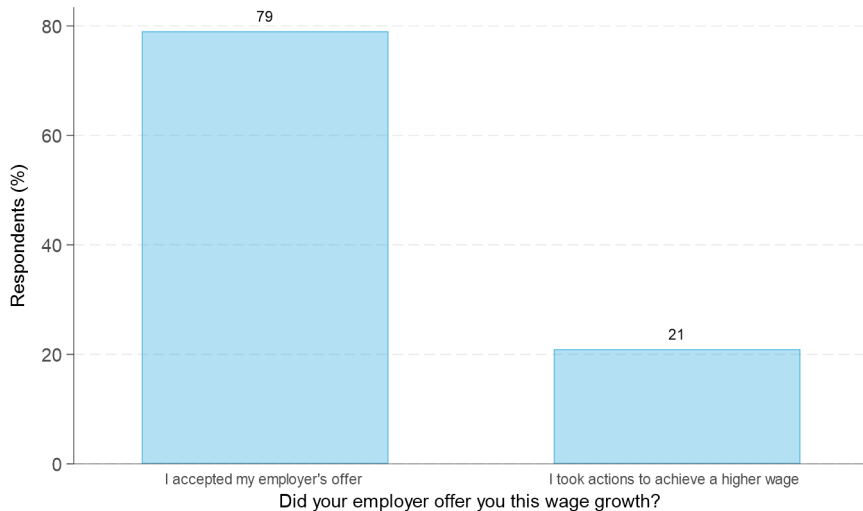
- Workers **choose** between accepting employer's "default wage" or conflict
- Conflict **raises wages** and allows "catch up" with inflation
- Workers sacrifice wage growth to **avoid conflict**

Motivating Evidence: Nominal Wage Growth with Inflation

Motivating evidence from survey:

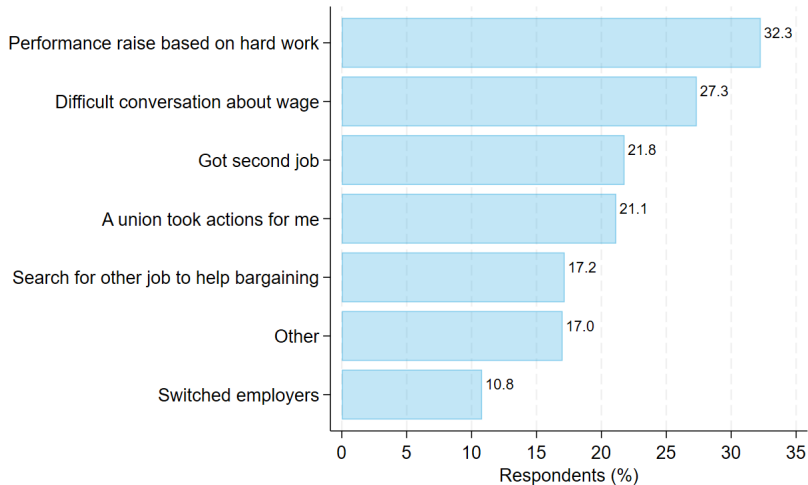
- Workers **choose** between accepting employer's "default wage" or conflict
- Conflict **raises wages** and allows "catch up" with inflation
- Workers sacrifice wage growth to **avoid conflict**

Workers Choose Between Employer Offer and Conflict to Raise Wage



Question asks about **nominal** wage growth

What Are the Costly Actions?



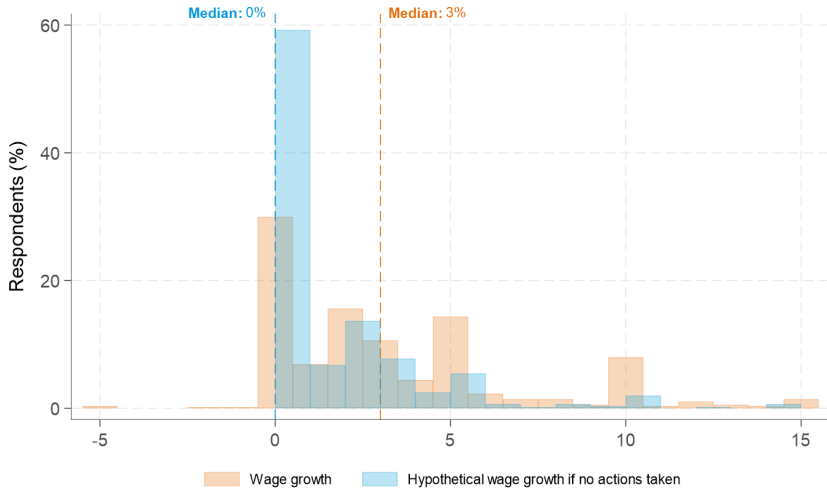
→ Diverse set of costly actions

Motivating Evidence: Nominal Wage Growth with Inflation

Motivating evidence from survey:

- Workers **choose** between accepting employer's "default wage" or conflict
- **Conflict raises wages** and allows "catch up" with inflation
- Workers sacrifice wage growth to **avoid conflict**

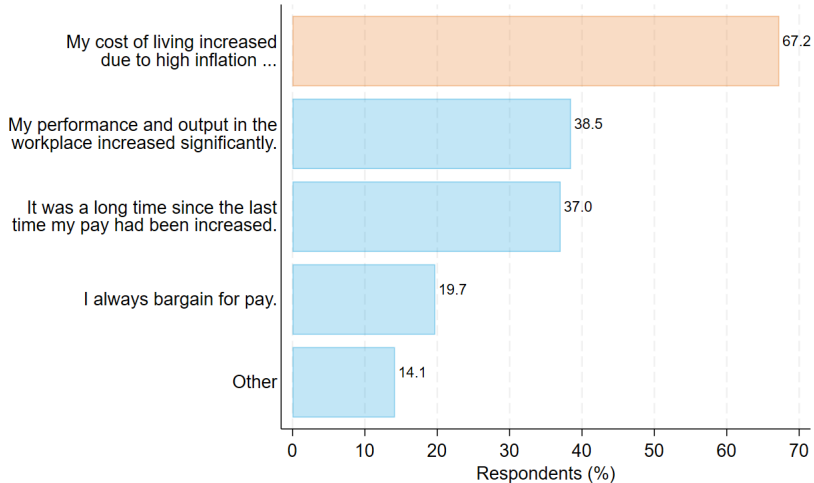
Conflict Leads to Higher Wages...



- Workers who conflict increased their wage relative to default employer offer.

... And Catch-Up with Inflation

Motivations for conflict:



Motivating Evidence: Nominal Wage Growth with Inflation

Motivating evidence from survey:

- Workers **choose** between accepting employer's "default wage" or conflict
- Conflict **raises wages** and allows "catch up" with inflation
- **Workers sacrifice wage growth to avoid conflict**

Workers sacrifice wage growth not to conflict



- Workers who do not conflict, report having sacrificed 2pp of wage growth

Motivating Evidence: Nominal Wage Growth with Inflation

Motivating evidence from survey:

- Workers **choose** between accepting employer's "default wage" or conflict
- Conflict **raises wages** and allows "catch up" with inflation
- Workers sacrifice wage growth to **avoid conflict**

Next: incorporate these features in a "menu cost" model of wage setting

[Alvarez et al '16; Nakamura et al '18; Straub et al '24]

Outline

Survey Design

Motivating Evidence: Nominal Wage Growth with Inflation

The Impact of Inflation on Workers: A Framework

Measuring Costs of Conflict with Survey

Quantitative Analysis

Beyond hand-to-mouth

Conclusion

Thank you

Workers' Problem

- A continuum of workers $i \in [0, 1]$ balances **benefit of wage catch up** and **cost of conflict**

$$\max_{\{\mathcal{J}_{i,t}\}_{t=0}^{+\infty}} \mathbb{E}_0 \left[\sum_{t \geq 0} \beta^t (\log c_{i,t} - \kappa_{i,t} \mathcal{J}_{i,t}) \right], \quad (1)$$

where $\mathcal{J}_{i,t} = 1$ if the worker takes costly actions to increase pay and 0 otherwise.

- Now: hand-to-mouth $c_{i,t} = w_{i,t}$. [Later: borrowing constraints.]
- $\kappa_{i,t}$: i.i.d. “Calvo-plus” cost to increase pay [Nakamura & Steinsson; Auclert et al.]

$$\kappa_{i,t} = \begin{cases} \kappa & \text{with probability } 1 - \lambda \\ 0 & \text{with probability } \lambda \end{cases}$$

Reduced form cost captures a variety of conflict actions

Workers' Problem

- A continuum of workers $i \in [0, 1]$ balances **benefit of wage catch up** and **cost of conflict**

$$\max_{\{\mathcal{J}_{i,t}\}_{t=0}^{+\infty}} \mathbb{E}_0 \left[\sum_{t \geq 0} \beta^t (\log c_{i,t} - \kappa_{i,t} \mathcal{J}_{i,t}) \right], \quad (1)$$

where $\mathcal{J}_{i,t} = 1$ if the worker takes costly actions to increase pay and 0 otherwise.

- Real wage (α : default nominal wage growth without inflation & γ : degree of indexation)

$$w_{i,t} = \begin{cases} w_{i,t-1} e^{\alpha - (1-\gamma)\pi_t} & \text{if } \mathcal{J}_{i,t} = 0 \\ w_{i,t}^* & \text{if } \mathcal{J}_{i,t} = 1 \end{cases}. \quad (2)$$

- Conflict-induced (real) wage $w_{i,t}^*$ that keeps up with inflation & productivity

[endogenous in the paper]

$$\log w_{i,t}^* = \log w_{i,t-1}^* + g_z + z_{i,t}, \quad (3)$$

where $z_{i,t}$ is idiosyncratic productivity shock & g_z is trend productivity growth.

The Impact of Inflation on Worker Welfare and Wages

- An unexpected $t = 0$ shock to inflation, $\{\hat{\pi}_t\}_{t=0}^{+\infty} = \{\pi_t - \pi^{ss}\}_{t=0}^{+\infty}$. Perfect foresight after.
- Study its impact on aggregate worker welfare

$$\mathcal{W} \equiv \int \mathbb{E}_0 \left[\sum_{t=0}^{\infty} \beta^t \{ u(c_{i,t}) - \kappa_{i,t} \mathcal{J}_{i,t} \} \right] di \quad (4)$$

and aggregate log real wages

$$\log w_t \equiv \int_0^1 \log(w_{i,t}) di.$$

The Impact of Inflation on Worker Wages

Definition 1.

The impact of inflation on aggregate log real wage can be decomposed into

$$\hat{w}_t \equiv \log w_t - \log w^{ss} = \hat{w}_t^{\text{erosion}} + \hat{w}_t^{\text{catchup}},$$

- **Wage erosion**: impact of inflation if worker's conflict decision does not change

$$\hat{w}_t^{\text{erosion}} \equiv \omega_t \left(\{ \pi_\tau, \mathcal{J}_{i,\tau}^{ss} \}_{i,\tau=0}^t \right) - \omega_t \left(\{ \pi^{ss}, \mathcal{J}_{i,\tau}^{ss} \}_{i,\tau=0}^t \right),$$

where $\omega_t \left(\{ \pi_\tau, \mathcal{J}_{i,\tau} \}_{i,\tau=0}^t \right)$ is aggregate log real wage at time t given $\{ \pi_\tau, \mathcal{J}_{i,\tau} \}$.

- **Wage catch up**: impact of inflation through changes in conflict decision

$$\hat{w}_t^{\text{catch up}} \equiv \omega_t \left(\{ \pi_\tau, \mathcal{J}_{i,\tau} \}_{i,\tau=0}^t \right) - \omega_t \left(\{ \pi_\tau, \mathcal{J}_{i,\tau}^{ss} \}_{i,\tau=0}^t \right). \quad (5)$$

The Impact of Inflation on Worker Welfare

Theorem.

The (first-order) impact of inflation on worker welfare is given by *wage erosion*

$$d\mathcal{W} \approx \sum_{t=0}^{\infty} \beta^t \hat{w}_t^{\text{erosion}} = \underbrace{\sum_{t=0}^{\infty} \beta^t \hat{w}_t}_{\text{aggregate wage responses}} - \sum_{t=0}^{+\infty} \beta^t \hat{w}_t^{\text{catch up}}$$

The Impact of Inflation on Worker Welfare

Theorem.

The (first-order) impact of inflation on worker welfare is given by *wage erosion*

$$d\mathcal{W} \approx \sum_{t=0}^{\infty} \beta^t \hat{w}_t^{\text{erosion}} = \underbrace{\sum_{t=0}^{\infty} \beta^t \hat{w}_t}_{\text{aggregate wage responses}} - \sum_{t=0}^{+\infty} \beta^t \hat{w}_t^{\text{catch up}}$$

because *costs of conflict offset* the benefits of *wage catch up*

$$d \left[\int \mathbb{E}_0 \left[\sum_{t=0}^{\infty} \beta^t \kappa_{i,t} \mathcal{I}_{i,t} \right] di \right] = \sum_{t=0}^{\infty} \beta^t \hat{w}_t^{\text{catch up}}. \quad (6)$$

[Milgrom-Segal '02 envelope theorem applied to discrete choice set]

The Impact of Inflation on Worker Welfare

Theorem.

The (first-order) impact of inflation on worker welfare is given by *wage erosion*

$$d\mathcal{W} \approx \sum_{t=0}^{\infty} \beta^t \hat{w}_t^{\text{erosion}} = \underbrace{\sum_{t=0}^{\infty} \beta^t \hat{w}_t}_{\text{aggregate wage responses}} - \sum_{t=0}^{+\infty} \beta^t \hat{w}_t^{\text{catch up}}$$

because *costs of conflict offset* the benefits of *wage catch up*

$$d \left[\int \mathbb{E}_0 \left[\sum_{t=0}^{\infty} \beta^t \kappa_{i,t} \mathcal{J}_{i,t} \right] di \right] = \sum_{t=0}^{\infty} \beta^t \hat{w}_t^{\text{catch up}}. \quad (6)$$

[Milgrom-Segal '02 envelope theorem applied to discrete choice set]

- The impact of inflation on *aggregate wage* $\sum_{t=0}^{\infty} \beta^t \hat{w}_t$ *misleading* for welfare
 - Even ≈ 0 , inflation could still be costly because wage catch up comes from costly conflicts
 - Welfare cost of inflation summarized by *wage erosion*

The Impact of Inflation on Worker Welfare

Theorem.

The (first-order) impact of inflation on worker welfare is given by *wage erosion*

$$d\mathcal{W} \approx \sum_{t=0}^{\infty} \beta^t \hat{w}_t^{\text{erosion}} = \underbrace{\sum_{t=0}^{\infty} \beta^t \hat{w}_t}_{\text{aggregate wage responses}} - \sum_{t=0}^{+\infty} \beta^t \hat{w}_t^{\text{catch up}}$$

because *costs of conflict offset* the benefits of *wage catch up*

$$d \left[\int \mathbb{E}_0 \left[\sum_{t=0}^{\infty} \beta^t \kappa_{i,t} \mathcal{J}_{i,t} \right] di \right] = \sum_{t=0}^{\infty} \beta^t \hat{w}_t^{\text{catch up}}. \quad (6)$$

[Milgrom-Segal '02 envelope theorem applied to discrete choice set]

- Contrast w/ purely time dependent wage setting: $\kappa \rightarrow \infty$, $d\mathcal{W} = \sum_{t=0}^{\infty} \beta^t \hat{w}_t$
 - Special case in which aggregate real wage sufficient for welfare

The Impact of Inflation on Worker Welfare

Theorem.

The (first-order) impact of inflation on worker welfare is given by *wage erosion*

$$d\mathcal{W} \approx \sum_{t=0}^{\infty} \beta^t \hat{w}_t^{erosion} = \underbrace{\sum_{t=0}^{\infty} \beta^t \hat{w}_t}_{\text{aggregate wage responses}} - \sum_{t=0}^{+\infty} \beta^t \hat{w}_t^{catch\ up}$$

because *costs of conflict offset* the benefits of *wage catch up*

$$d \left[\int \mathbb{E}_0 \left[\sum_{t=0}^{\infty} \beta^t \kappa_{i,t} \mathcal{I}_{i,t} \right] di \right] = \sum_{t=0}^{\infty} \beta^t \hat{w}_t^{catch\ up}. \quad (6)$$

[Milgrom-Segal '02 envelope theorem applied to discrete choice set]

- Next: use survey to quantify conflict costs

Outline

Survey Design

Motivating Evidence: Nominal Wage Growth with Inflation

The Impact of Inflation on Workers: A Framework

Measuring Costs of Conflict with Survey

Quantitative Analysis

Beyond hand-to-mouth

Conclusion

Thank you

Additional Survey Evidence to Quantify and Validate the Model

Calibrate the model and quantify the cost of conflict

- Elicit the cost of conflict
- Elicit how default wage offer changes after inflation, absent conflict

Validate the model

- Does propensity to conflict increase with inflation?

Eliciting Costs of Conflict

- *Question to workers:* think ahead 12 months in the future
- Elicit nominal wage growth workers believe they get **via costly actions**

$$\Delta W^{\text{action}} \equiv \log W_{i,t}^* - \log W_{i,t-1}$$

[$W_{i,t}^*$: action-induced nominal wage]

What pay growth do you think you would get if you do your best to increase pay using any strategies at your disposal, including the common strategies listed above?

- Elicit nominal wage growth where workers are **indifferent** between
 - **accepting** if offered by their employers vs **taking costly actions**

$$\Delta W^{\text{indiff}} \equiv \log W_{i,t}^{\text{indiff}} - \log W_{i,t-1}$$

- Cost of conflict:

$$x^{\text{conflict}} = \Delta W^{\text{action}} - \Delta W^{\text{indiff}}$$

Eliciting Costs of Conflict

Standard tool from experimental economics: “multiple price list”

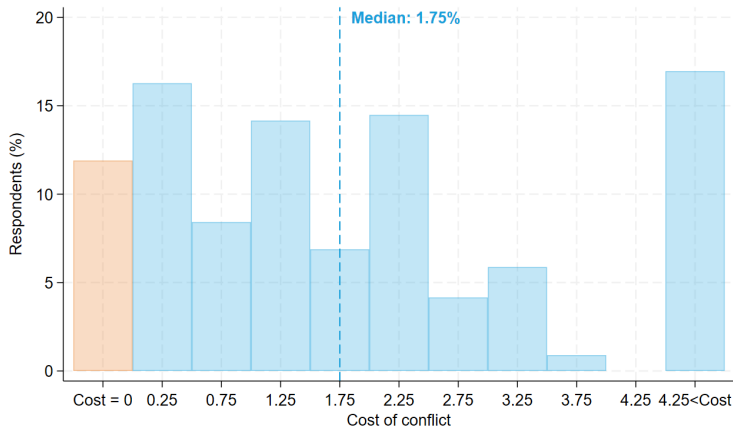
[Jack et al. '22]

	I would accept my employer's pay growth offer	I would do my best using any strategies at my disposal to increase my pay further
Employer offers you pay growth of 4%	<input type="radio"/>	<input type="radio"/>
Employer offers you pay growth of 3.5%	<input type="radio"/>	<input type="radio"/>
Employer offers you pay growth of 3%	<input type="radio"/>	<input type="radio"/>
Employer offers you pay growth of 2.5%	<input type="radio"/>	<input type="radio"/>
Employer offers you pay growth of 2%	<input type="radio"/>	<input type="radio"/>
Employer offers you pay growth of 1.5%	<input type="radio"/>	<input type="radio"/>
Employer offers you pay growth of 1%	<input type="radio"/>	<input type="radio"/>
Employer offers you pay growth of 0.5%	<input type="radio"/>	<input type="radio"/>
Employer offers you pay growth of 0%	<input type="radio"/>	<input type="radio"/>

Notes: let ΔW^{indiff} denote lowest nominal wage growth where workers accept employers' offer

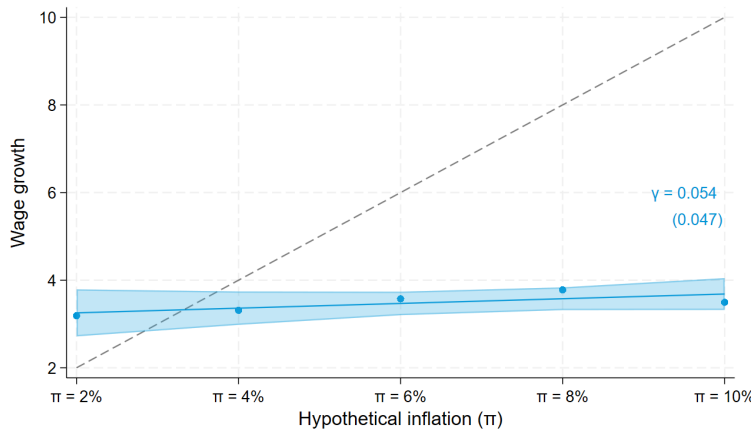
$$x^{\text{conflict}} \in [\Delta W^{\text{action}} - \Delta W^{\text{indiff}}, \Delta W^{\text{action}} - \Delta W^{\text{indiff}} + 0.5]$$

Conflict Costs



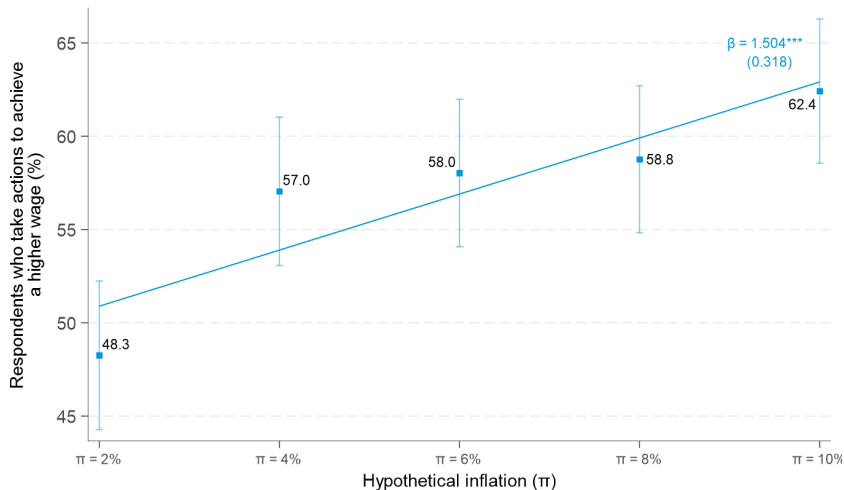
- Direct evidence on **conflict costs**: $\kappa_{i,t} = 0$ with prob. λ and $\kappa_{i,t} = \kappa$ otherwise
 - $\lambda = 0.11$ to match share of people who would always conflict
 - Calibrate κ to median $x^{\text{conflict}} = 1.75\%$

Nominal Wage Growth without Conflict



- Evidence on **default wages + indexation**: $W_{i,t}^{default} = W_{i,t-1} e^{\alpha + \gamma \pi_t}$
 - Intercept: with zero inflation, 3% default wage growth $\Rightarrow \alpha = 0.75\%$
 - Indexation: $\Delta \pi = 1\%$ then $\Delta \log W_{i,t}^{default} = 0.05\% \Rightarrow \gamma = 0.05$

Inflation and the Probability of Conflict in the Data



- 1% $\Delta\pi$ implies a 1.5% increase in conflict

Inflation and the Probability of Conflict in the Model

Proposition.

Let $frac_0$ denote the share of conflict. Then,

$$\frac{dfrac_0}{d\pi_0} = (1 - \gamma)(1 - \lambda)g(-x^{\text{conflict}}) > 0$$

- **Key prediction:** increase in inflation increases conflict
 - $(1 - \gamma) \leftarrow$ lack of indexation: $\uparrow \pi$ lowers real wages
 - $(1 - \lambda) \leftarrow$ share workers who must pay cost
 - $g(-x^{\text{conflict}}) \leftarrow$ mass of workers at conflict threshold

Takeaway

1. Significant cost of conflict $\approx 1.75\%$ of wages
2. Almost no indexation: 1 p.p. inflation $\Rightarrow \sim 0$ in employer-offered nominal wage growth
3. 1 p.p. inflation \Rightarrow 1.5 p.p. more likely to conflict to raise wages

Outline

Survey Design

Motivating Evidence: Nominal Wage Growth with Inflation

The Impact of Inflation on Workers: A Framework

Measuring Costs of Conflict with Survey

Quantitative Analysis

Beyond hand-to-mouth

Conclusion

Thank you

Calibration - Quarterly Frequency

<i>Parameter</i>	<i>Description</i>	<i>Value</i>	<i>Target</i>
β	Discount factor	0.99	Standard value
κ	Conflict cost	3.98%	Survey
λ	Share of free adjusters	11%	Survey
g_z	Wage growth rate	0.75%	CPS: Ann. w growth = 3%
α	Default wage growth	0.75%	Survey
γ	Indexation	0.08	Survey
π^{ss}	Steady state inflation	0.5%	2% annual inflation
\bar{z}	Idios. shocks $z \sim U[-\bar{z}, \bar{z}]$	0.46%	$\bar{z} = \mu = g_z - \alpha + (1 - \gamma) \pi^{ss}$

Three Inflationary Scenarios

Solve for first-order responses to inflation shock $\{d\pi_t\}_{t \geq 0}$, starting from steady state

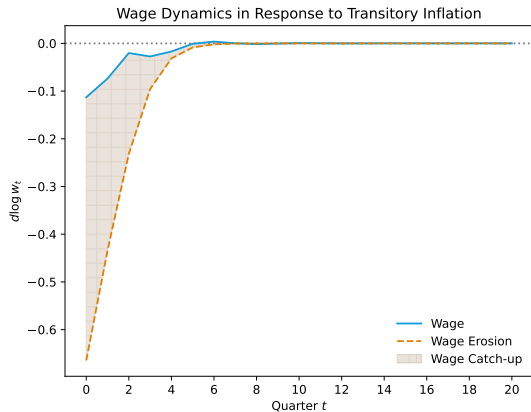
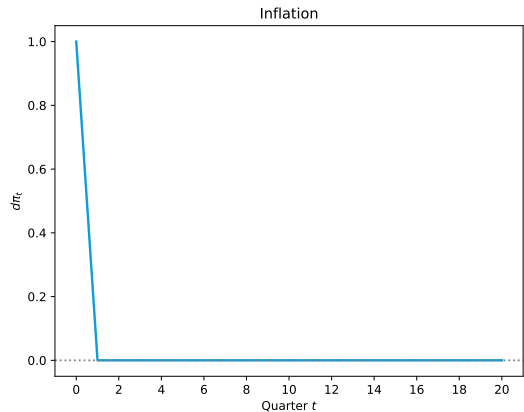
- Using SSJ methods

[Auclert–Bardóczy–Rognlie–Straub (2021), Auclert–Rigato–Rognlie–Straub (2024)]

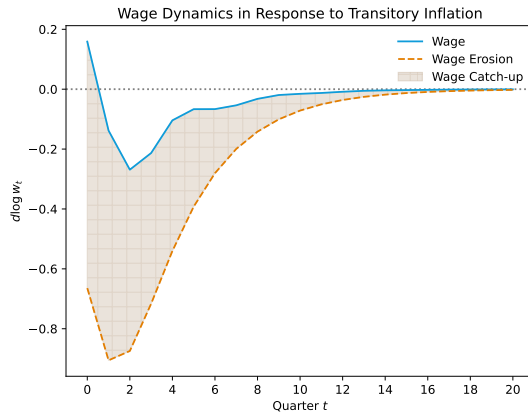
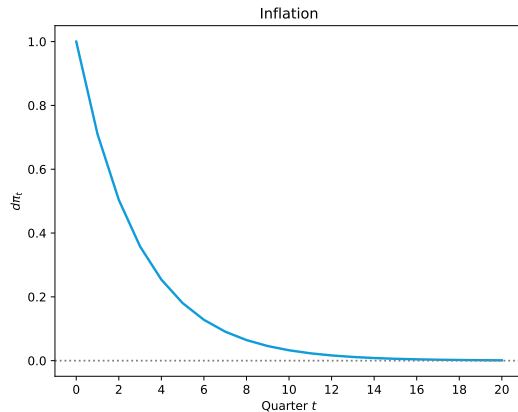
Evaluate three inflation shocks:

1. Transitory inflation: $d\pi_0 > 0$ and $d\pi_t = 0$ for $t \geq 1$
2. Persistent inflation: $d\pi_t = \rho^t \varepsilon$, with $\rho = 0.71$
3. 2021-23 inflation experience

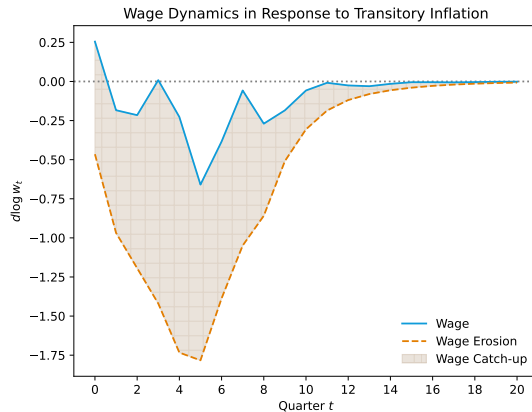
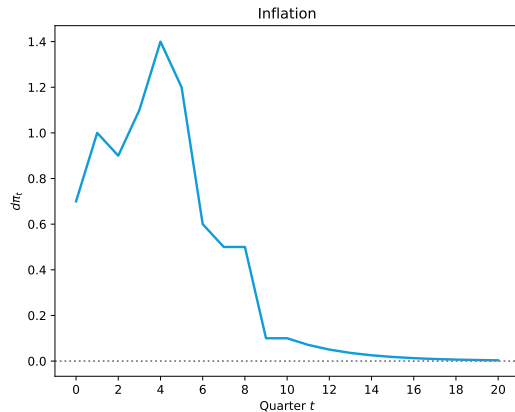
Wage Dynamics: One-period Inflation



Wage Dynamics: Persistent Inflation



Wage Dynamics: 2021-23 Inflation



No Foresight

Welfare Decomposition

	<i>Overall</i>	<i>Wage response</i>	<i>Conflict costs</i>
Purely transitory inflation	−1.45%	−0.25%	−1.21%
Persistent inflation	−4.90%	−0.82%	−4.07%
2021-23 inflation surge	−11.66%	−1.95%	−9.70%

Outline

Survey Design

Motivating Evidence: Nominal Wage Growth with Inflation

The Impact of Inflation on Workers: A Framework

Measuring Costs of Conflict with Survey

Quantitative Analysis

Beyond hand-to-mouth

Conclusion

Thank you

Beyond hand-to-mouth

What if workers can save, subject to standard borrowing constraint $a_{i,t} \geq \underline{a}$?

Beyond hand-to-mouth

What if workers can save, subject to standard borrowing constraint $a_{i,t} \geq \underline{a}$?

Theorem.

The (first-order) impact of inflation on worker welfare is given by *corrected-wage erosion*

$$d\mathcal{W} \approx \sum_{t=0}^{\infty} \beta^t u'(c_{i,t}^{ss}) w_{i,t}^{ss} \hat{w}_{i,t}^{erosion}$$
$$\Rightarrow \frac{d\mathcal{W}}{\int_0^1 u'(c_{i,t}^{ss}) w_{i,t}^{ss} di} \approx \sum_{t=0}^{+\infty} \beta^t \hat{w}_t^{erosion} + \sum_{t=0}^{\infty} \beta^t \text{COV} \left(\frac{u'(c_{i,t}^{ss}) w_{i,t}^{ss}}{\int_0^1 u'(c_{i,t}^{ss}) w_{i,t}^{ss} di}, \hat{w}_{i,t}^{erosion} \right)$$

- Additional correction: for welfare, not all wage erosion weighted equally
 - Erosion of *borrowing-constrained workers* has higher welfare impact

Outline

Survey Design

Motivating Evidence: Nominal Wage Growth with Inflation

The Impact of Inflation on Workers: A Framework

Measuring Costs of Conflict with Survey

Quantitative Analysis

Beyond hand-to-mouth

Conclusion

Thank you

Conclusion

- Reconcile:
 - Survey: People dislike inflation because they believe it erodes real wages
 - Data: nominal wages tend to catch up with prices
- Wage erosion determines inflation's impact on worker welfare
- Wage catch up through costly conflict with employers doesn't raise workers' welfare
- The impact of inflation shocks on aggregate wage misleading for worker welfare
 - Costs of inflation to workers ≈ 3 times as large as implied by worker wage responses
 - Even wages catch up with prices, inflation still costly due to costly conflict

Outline

Survey Design

Motivating Evidence: Nominal Wage Growth with Inflation

The Impact of Inflation on Workers: A Framework

Measuring Costs of Conflict with Survey

Quantitative Analysis

Beyond hand-to-mouth

Conclusion

Thank you

Extra Slides

Table 3: Distributions in Survey Sample vs. Population

	Survey	US population
Male	0.52	0.52
Female	0.48	0.48
Secondary education (e.g. GED/GCSE)	0.02	0.02
High school diploma/A-levels	0.37	0.39
Technical/community college	0.12	0.11
Undergraduate degree (BA/BSc/other)	0.32	0.30
Graduate degree (MA/MSc/MPhil/other)	0.14	0.13
Doctorate degree (PhD/other)	0.04	0.04
Democrat	0.28	0.28
Republican	0.26	0.26
Independent	0.33	0.33
None	0.07	0.07
Other party	0.06	0.06
22-29 years old	0.24	0.20
30-39 years old	0.38	0.29
40-49 years old	0.21	0.26
50-60 years old	0.16	0.26

Table 3: Distributions in Survey Sample vs. Population

	Survey	US population
Full-Time	0.83	0.83
Part-Time	0.17	0.17
For-profit company	0.80	0.77
Not-for-profit corporation	0.09	0.07
State government	0.03	0.06
Federal government	0.02	0.03
Local government	0.04	0.07
Other employer	0.01	
White	0.68	0.75
Black	0.12	0.14
Asian	0.08	0.07
Mixed	0.08	0.02
Other	0.04	0.02
Not reported	0.00	

Table 3: Distributions in Survey Sample vs. Population

	Survey	US population
Covered by a union	0.11	0.13
Not part of a union	0.81	0.87
Not reported	0.08	
<u>Income</u>		
\$0-\$19,999	0.12	0.12
\$20,000-\$39,999	0.24	0.22
\$40,000-\$69,999	0.34	0.31
\$70,000-\$99,999	0.17	0.16
\$100,000-\$124,999	0.06	0.08
\$125,000+	0.07	0.11

Conflict Raises Wages ...



Lemma.

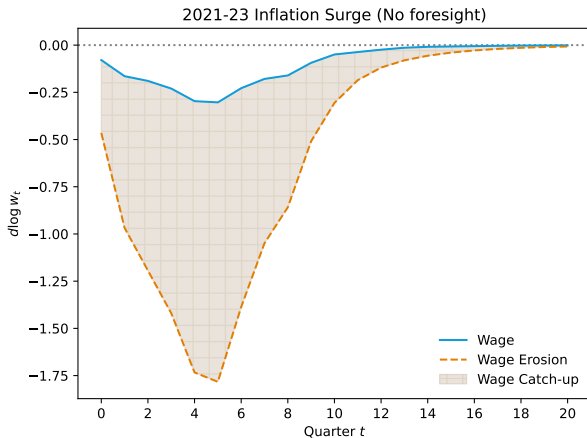
Let the value function be

$$v(x) \equiv \max \left\{ x + \beta \mathbb{E} \left[\max \left\{ v(0) - \kappa', v(x') \right\} \right] \right\}$$

where $x \equiv \log \left(w_{i,t} / w_{i,t}^ \right)$ denotes the wage gap. Then,*

$$v \left(-x^{\text{conflict}} \right) = v(0) - \kappa.$$

- Measured conflict cost is directly informative of κ .



Bloomberg

● **Live TV** Markets ▾ Economics Industries Tech Politics Businessweek Opinion More ▾

Equality
+ Economics

Averting Auto Strike Hinges on Pay Raises to Cover Inflation

- Union wants cost-of-living allowance built into pay raises
- GM, Ford and Stellantis could face work stoppage this week

Evidence from Unions

