Online Appendix for

"Geospatial Heterogeneity in Inflation:

A Market Concentration Story"

(NOT FOR PUBLICATION)

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A Robustness: NielsenIQ Consumer Panel

We use the household-year level sample from 2006 to 2020 in the NielsenIQ Consumer Panel data and identify households that make purchases within and outside their residential MSA in a given year. Table A.1 shows that 92% of households made purchases exclusively within their residential MSA.

Furthermore, when examining household characteristics and shopping patterns by each category, Table A.2 shows that their properties (such as income levels, the average number of stores households purchase from, and total amount of spending) are similar across groups. For households that shop outside of their MSA, they visit an average of 1.75 stores, spend approximately 50% of their total expenditure outside their residential MSA, and the average number of these outside MSAs they purchase from is 1.05.

In addition, we compute income deciles using two different MSA definitions in NielsenIQ. One

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Table A.1: Fraction of Households Shopping within their Residential MSA

Indicator	Observation	Percent
1	780,500	92.32
0	64,932	7.68
Total	845,432	100

Notes: The table shows the fraction of households that consume within their residential MSA (with an indicator value of 1) in each given year. The data covers household-year observations from 2006 to 2020.

Table A.2: Characteristics of Households by Shopping Types

Variable	Mean (SD)	Mean (SD)
Indicator	1	0
Income	20.46	19.94
	(5.98)	(5.87)
Store #	3.32	3.77
	(1.90)	(2.08)
Spending Amount	1812.05	1659.12
	(1985.68)	(1811.08)
Store # (out)		3.77
		(2.08)
Spending Amount (out)		714.78
		(1226.29)
MSA # (out)		1.05
		(0.23)
Obs	780,500	64,932

Notes: The table provides the shopping characteristics of households by their types based on whether they shop within their residential MSA (indicator=1) or not (indicator=0). The first column indicates the households only shopping inside their MSA, and the second column shows those shopping outside of their MSA. Store # is the number of stores the households purchase from, Spending Amount is the total amount of spending, Store # (out) is the number of stores outside of the household's living MSA, Spending Amount (out) is the amount of spending made outside of their living MSA, and MSA # (out) is the number of MSAs the household shop, outside of their residential MSA. This is the household-year level sample over 2006-2020.

is based on the MSA information of households in the NielsenIQ Consumer Panel, and the other is based on the MSA information of consumers, derived by linking the locations of stores from which households make purchases in the Scanner data with household income data in the NielsenIQ

Table A.3: Gaps in Two Income Decile Definitions: Household vs. Consumer MSAs

Gap	Observation	Percent
-3	1	0.54
-1	20	10.75
0	140	75.27
1	25	13.44
Total	186	100

Notes: The table computes the gap in income deciles when defined by consumer income and household income, using the MSA-level sample.

Consumer Panel. Table A.3 shows the gap between these two definitions, revealing that most MSAs (75.27%) align with the same income decile definitions, and only a very small fraction (0.54%) exhibit a gap of three deciles. This finding is consistent with our baseline measures of income deciles based on store locations and BEA income per capita data not being mismeasured.

B MSA-level Price Indices: BLS vs. NielsenIQ

To assess the representativeness of NielsenIQ, we compare NielsenIQ food price indices with the official CPI series provided by the U.S. Bureau of Labor Statistics for the MSAs available in the CPI data. In particular, we use three MSAs—Chicago, Los Angeles, and New York. NielsenIQ tracks the official series well across all three markets, as shown in Figures B.1, B.2, and B.3.

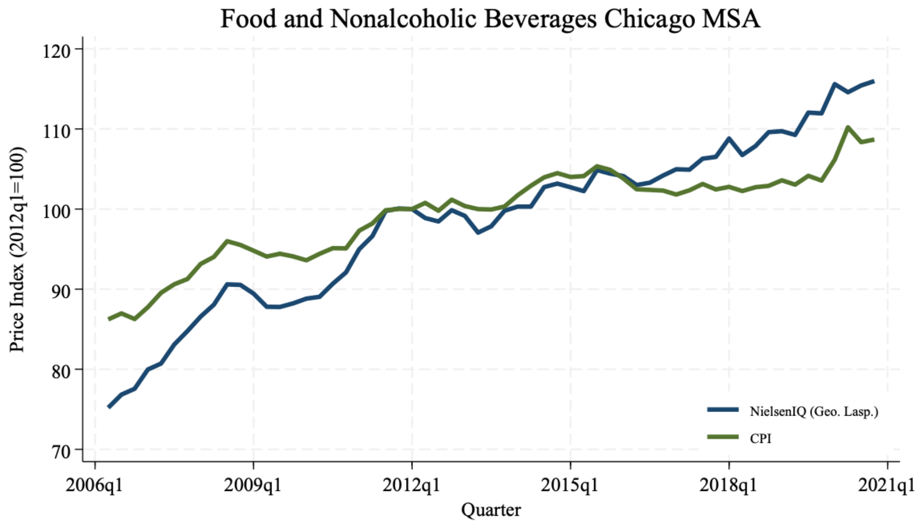

Figure B.1: Price Index for Aggregated Food: CPI vs. NielsenIQ (Chicago MSA)
Notes: This figure compares the CPI provided by the U.S. Bureau of Labor Statistics with the chained geometric Laspeyres price index constructed from NielsenIQ Scanner data for the Chicago MSA.

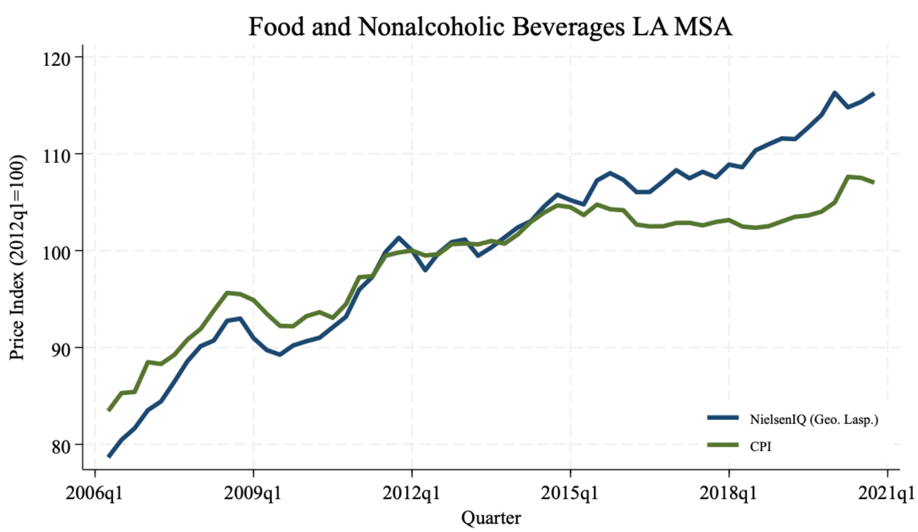

Figure B.2: Price Index for Aggregated Food: CPI vs. NielsenIQ (LA MSA)
Notes: This figure compares the CPI provided by the U.S. Bureau of Labor Statistics with the chained geometric Laspeyres price index constructed from NielsenIQ Scanner data for the Los Angeles MSA.

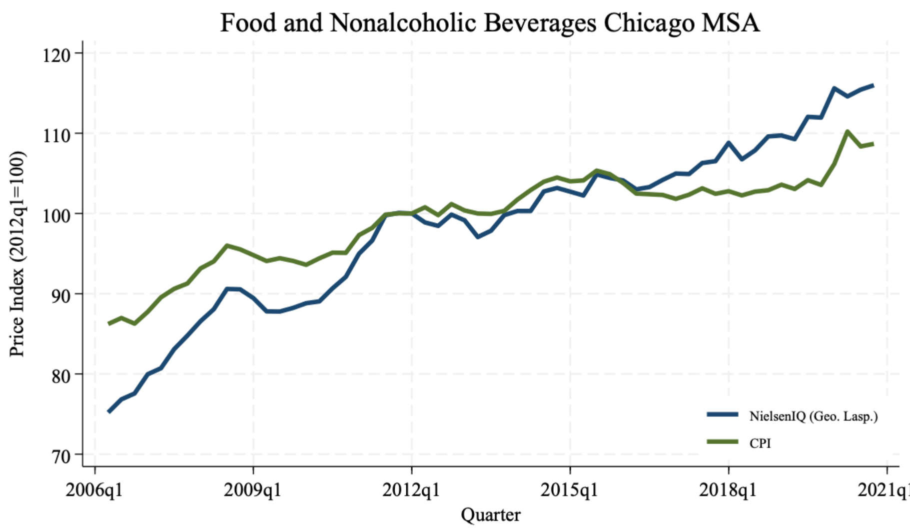

Figure B.3: Price Index for Aggregated Food: CPI vs. NielsenIQ (New York MSA)

Notes: This figure compares the CPI provided by the U.S. Bureau of Labor Statistics with the chained geometric Laspeyres price index constructed from NielsenIQ Scanner data for the New York MSA.

C Robustness: Price and Inflation Patterns

C.1 Other Price Indexes

Alternatively, we use Sato-Vartia index, one of the demand-based indexes, to check robustness. To create the index, we replace the weights in equation (1), ω_{mkt}, with the following:

$$\omega_{mkt} = \frac{\frac{(s_{mkt} - s_{kt-1})}{(\ln s_{mkt} - \ln s_{mkt-1})}}{\sum_{k \in \mathbb{C}_{m,t-1,t}} \frac{(s_{mkt} - s_{mkt-1})}{(\ln s_{mkt} - \ln s_{mkt-1})}},$$

which accounts for product entry and exit, in addition to the demand effects for common goods appearing between periods $(t-1)$ and t. Figure C.1 shows that the baseline result still holds with the demand-based index.

In addition, we construct the decile-level price index by aggregating the MSA-level indexes using an unweighted average. As shown in Figure C.2, the results based on this approach are consistent with our main findings.

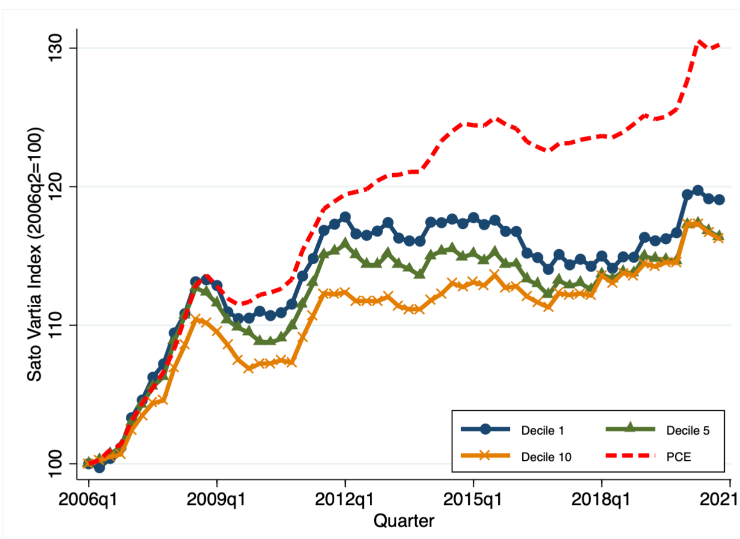

Figure C.1: Demand-based Price Index (Sato-Vartia) for Aggregated Food

Notes: This figure represents the chained Sato-Vartia price index constructed using NielsenIQ Retail data (solid lines) as well as the official personal consumption expenditures (PCE) index from the Bureau of Economic Analysis (dashed line) for aggregate food and beverages. All descriptions remain the same as before.

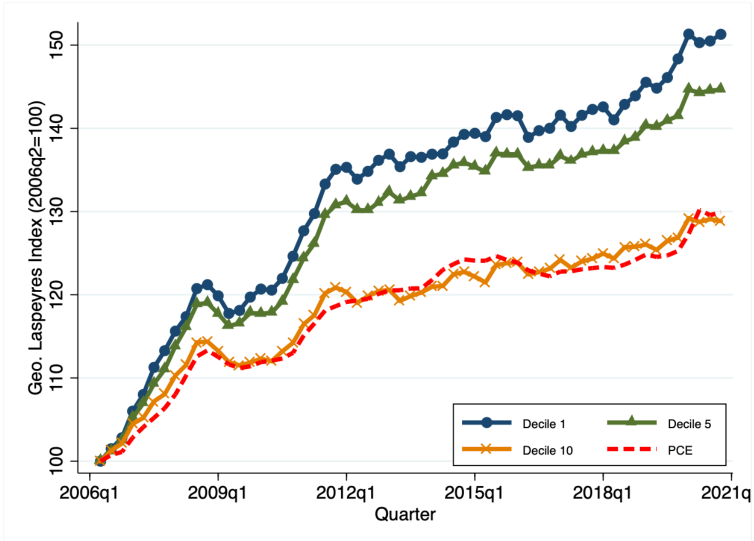

Figure C.2: Price Index for Aggregate Foods (MSA-level)

Notes: This figure represents the chained geometric Laspeyres price index constructed in the NielsenIQ (solid lines) as well as the official personal consumption expenditures (PCE) index from the Bureau of Economic Analysis (dashed line) for aggregate food and beverages. All descriptions remain the same as before except that the solid lines constructed in NielsenIQ are the unweighted average of the MSA-level indexes.

C.2 Other Food Items

We also construct these price indexes for more disaggregated food categories and find consistent results across them. For illustrative purposes, we present results for the following three representative categories: eggs, dairy, and fats and oils.

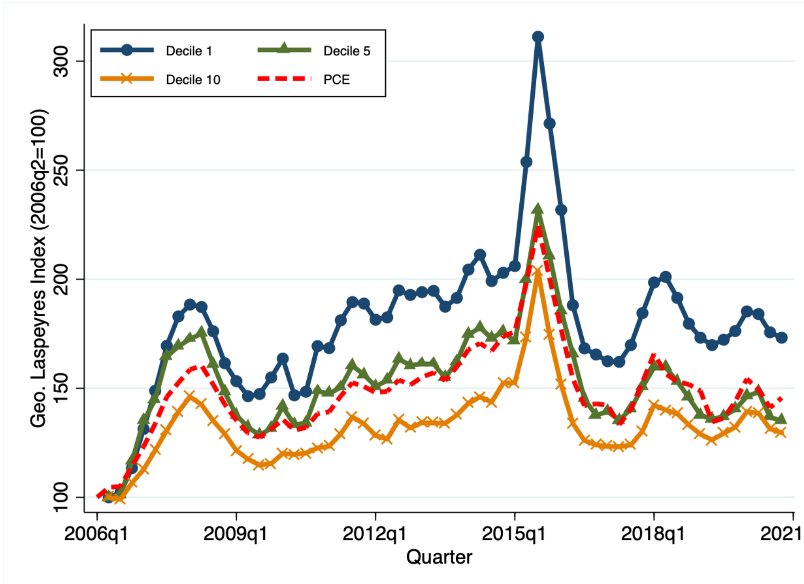

Figure C.3: Price Index for Eggs

Notes: This figure represents the chained geometric Laspeyres price index constructed in the NielsenIQ (solid lines) as well as the official personal consumption expenditures (PCE) index from the Bureau of Economic Analysis (dashed line) for eggs. All else remains the same as before.

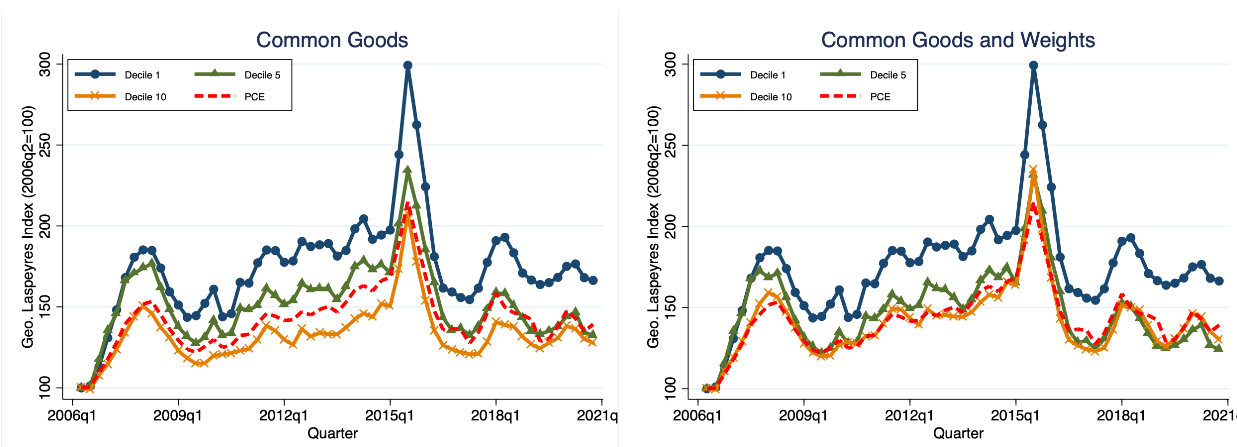

Figure C.4: Price Index for Eggs (Common Goods and Weights)

Notes: This figure represents the chained geometric Laspeyres price index constructed in the NielsenIQ (solid lines) as well as the official personal consumption expenditures (PCE) index from the Bureau of Economic Analysis (dashed line) for eggs. All descriptions remain the same as before except that the solid lines constructed in NielsenIQ are restricted to the set of goods present across all ten deciles in quarters $t-1$ and t (named "common goods") in the left panel, and are restricted to these common goods and further based on the same sales weights in decile 1 in the right panel.

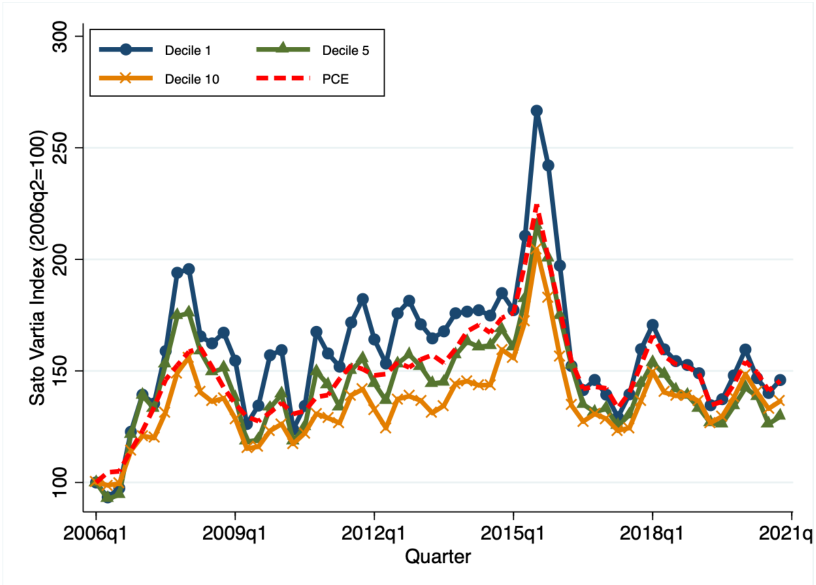

Figure C.5: Demand-based Price Index (Sato-Vartia) for Eggs

Notes: This figure represents the chained Sato-Vartia price index constructed in the NielsenIQ (solid lines) as well as the official personal consumption expenditures (PCE) index from the Bureau of Economic Analysis (dashed line) for eggs. All descriptions remain the same as before.

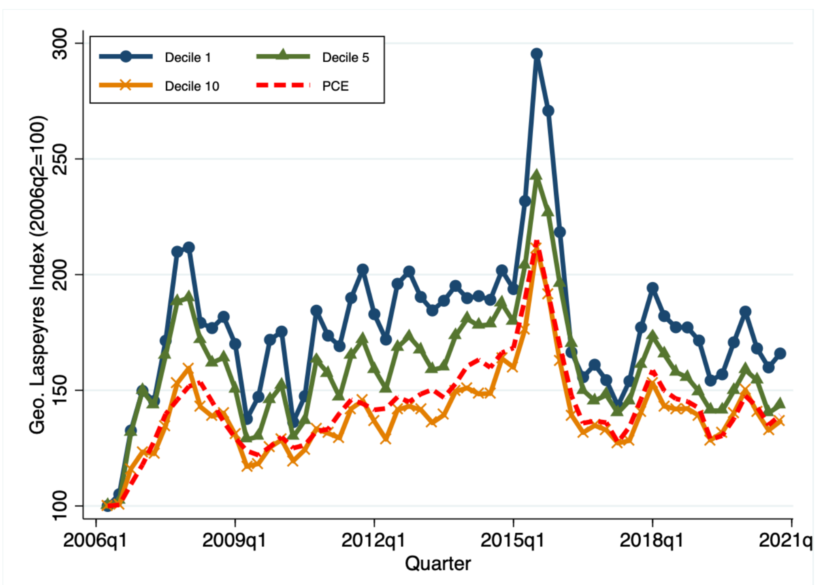

Figure C.6: Price Index for Eggs (MSA-level)

Notes: This figure represents the chained geometric Laspeyres price index constructed in the NielsenIQ (solid lines) as well as the official personal consumption expenditures (PCE) index from the Bureau of Economic Analysis (dashed line) for eggs. All descriptions remain the same as before except that the solid lines constructed in NielsenIQ are the average of the MSA-level indexes.

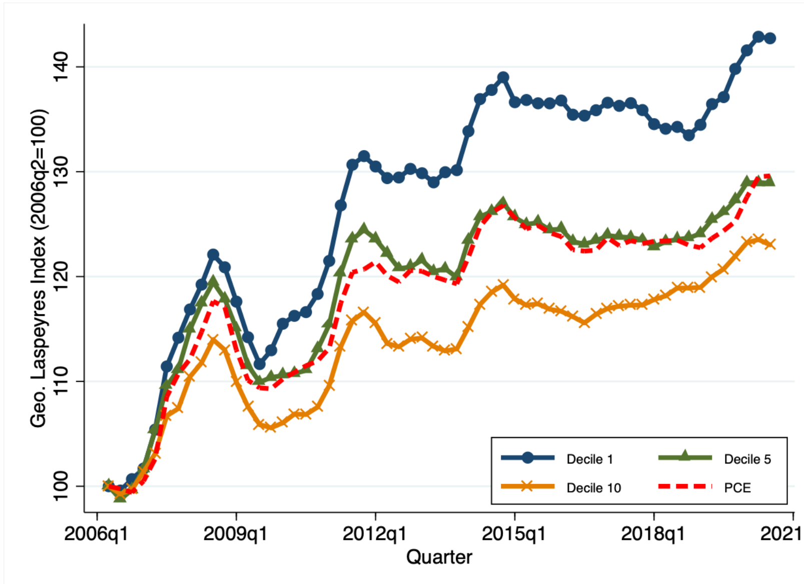

Figure C.7: Price Index for Dairy

Notes: This figure represents the chained geometric Laspeyres price index constructed in the NielsenIQ (solid lines) as well as the official personal consumption expenditures (PCE) index from the Bureau of Economic Analysis (dashed line) for dairy. All else remains the same as before.

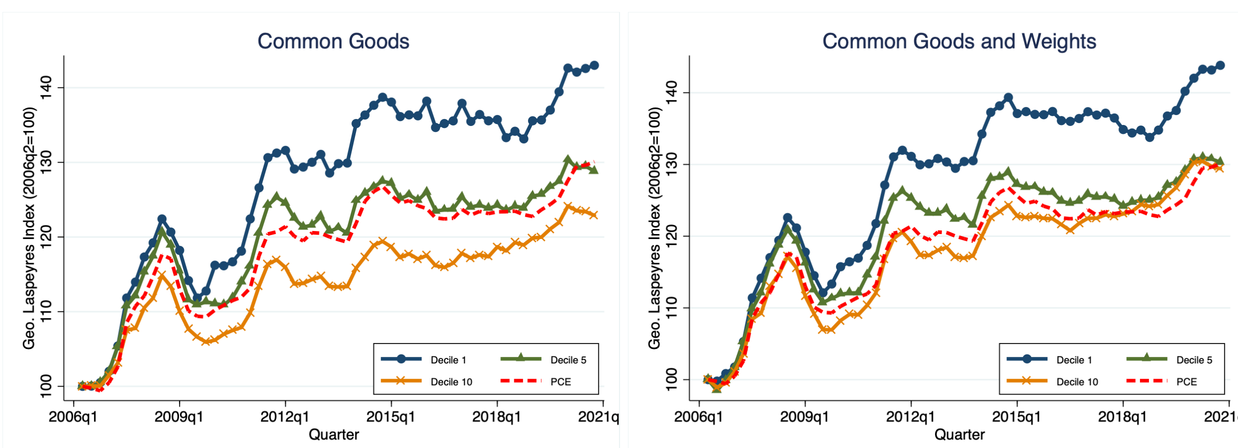

Figure C.8: Price Index for Dairy (Common Goods and Weights)

Notes: This figure represents the chained geometric Laspeyres price index constructed in the NielsenIQ (solid lines) as well as the official personal consumption expenditures (PCE) index from the Bureau of Economic Analysis (dashed line) for dairy. All descriptions remain the same as before except that the solid lines constructed in NielsenIQ are restricted to the set of goods present across all ten deciles in quarters $t-1$ and t (named “common goods”) in the left panel, and are restricted to these common goods and further based on the same sales weights in decile 1 in the right panel.

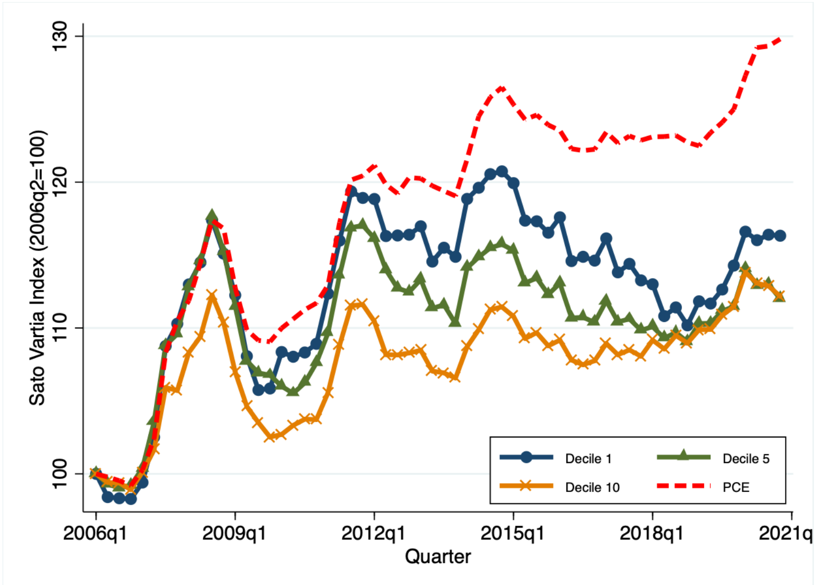

Figure C.9: Demand-based Price Index (Sato-Vartia) for Dairy

Notes: This figure represents the chained Sato-Vartia price index constructed in the NielsenIQ (solid lines) as well as the official personal consumption expenditures (PCE) index from the Bureau of Economic Analysis (dashed line) for dairy. All descriptions remain the same as before.

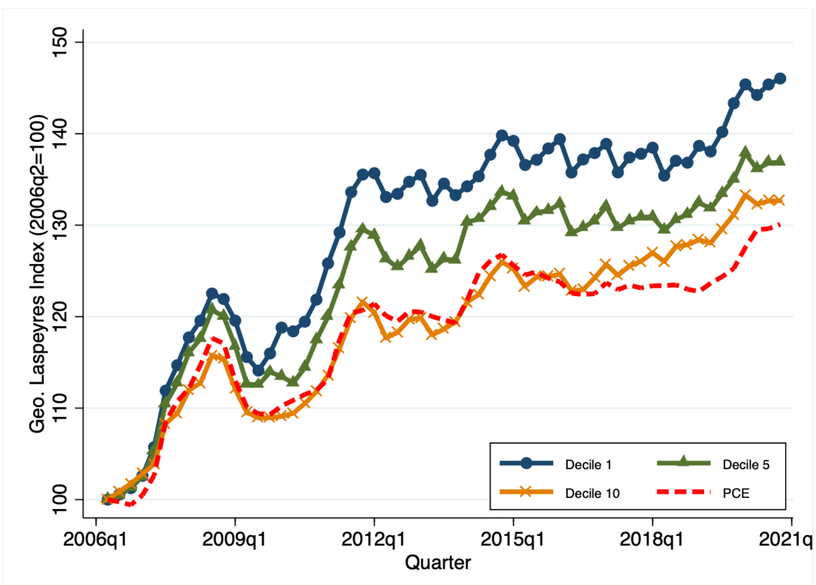

Figure C.10: Price Index for Dairy (MSA-level)

Notes: This figure represents the chained geometric Laspeyres price index constructed in the NielsenIQ (solid lines) as well as the official personal consumption expenditures (PCE) index from the Bureau of Economic Analysis (dashed line) for dairy. All descriptions remain the same as before except that the solid lines constructed in NielsenIQ are the average of the MSA-level indexes.

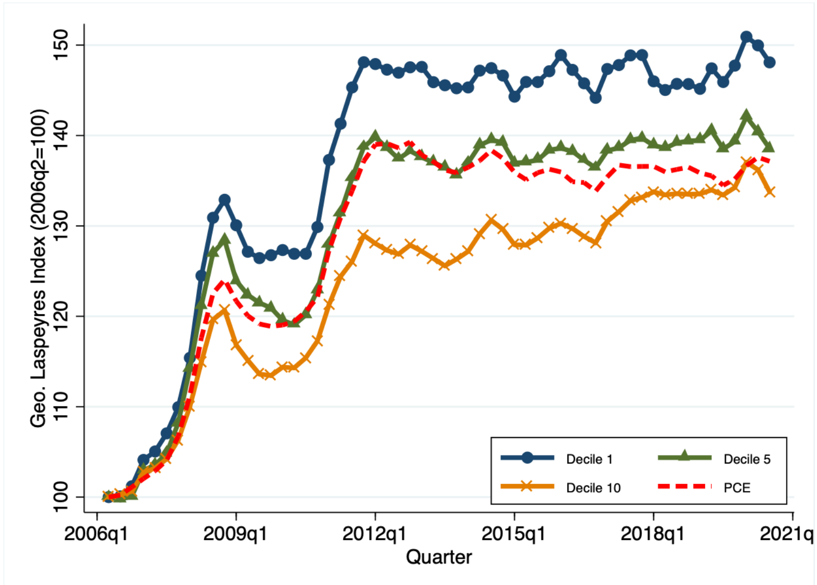

Figure C.11: Price Index for Fats and Oil

Notes: This figure represents the chained geometric Laspeyres price index constructed in the NielsenIQ (solid lines) as well as the official personal consumption expenditures (PCE) index from the Bureau of Economic Analysis (dashed line) for fats and oil. All else remains the same as before.

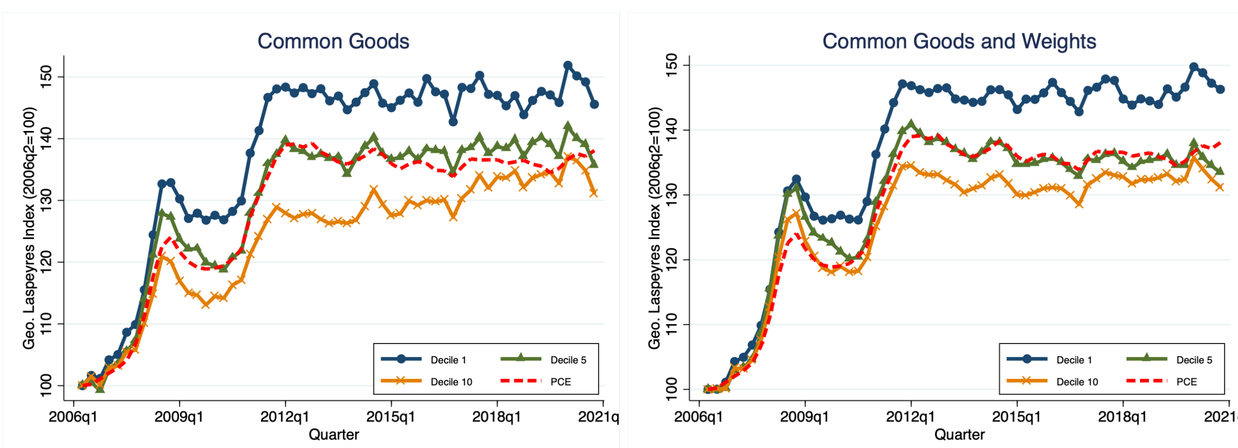

Figure C.12: Price Index for Fats and Oil (Common Goods and Weights)

Notes: This figure represents the chained geometric Laspeyres price index constructed in the NielsenIQ (solid lines) as well as the official personal consumption expenditures (PCE) index from the Bureau of Economic Analysis (dashed line) for fats and oil. All descriptions remain the same as before except that the solid lines constructed in NielsenIQ are restricted to the set of goods present across all ten deciles in quarters $t-1$ and t (named "common goods") in the left panel, and are restricted to these common goods and further based on the same sales weights in decile 1 in the right panel.

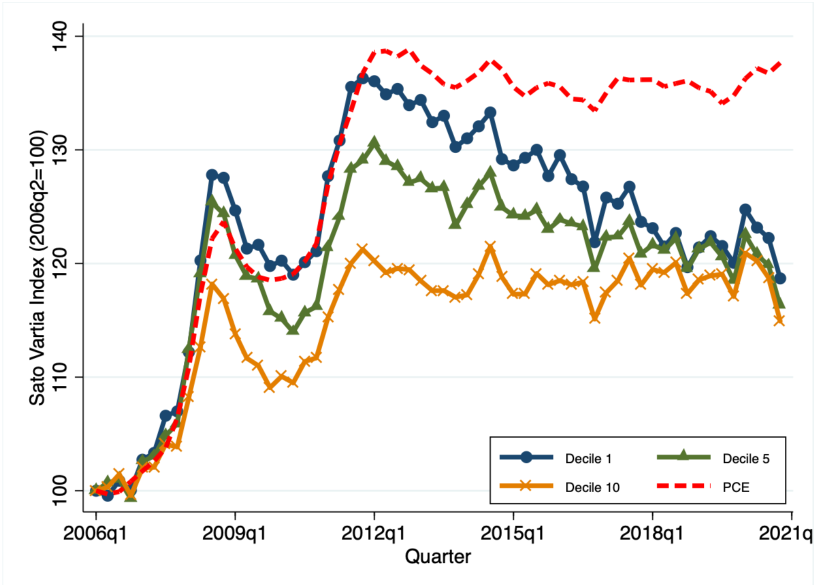

Figure C.13: Demand-based Price Index (Sato-Vartia) for Fats and Oil

Notes: This figure represents the chained Sato-Vartia price index constructed in the NielsenIQ (solid lines) as well as the official personal consumption expenditures (PCE) index from the Bureau of Economic Analysis (dashed line) for fats and oil. All descriptions remain the same as before.

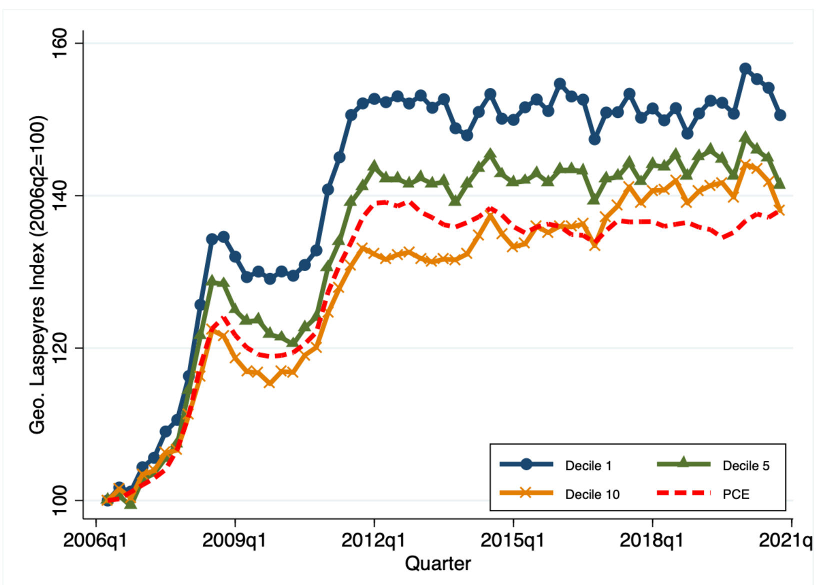

Figure C.14: Price Index for Fats and Oil (MSA-level)

Notes: This figure represents the chained geometric Laspeyres price index constructed in the NielsenIQ (solid lines) as well as the official personal consumption expenditures (PCE) index from the Bureau of Economic Analysis (dashed line) for fats and oil. All descriptions remain the same as before except that the solid lines constructed in NielsenIQ are the average of the MSA-level indexes.

D Robustness: Retailer Market Structure

D.1 Other Measures and Controls

We assess the robustness of the regression results in Table 4 by using alternative measures of market concentration (CR1 and CR3) and controlling for MSA-level population. The corresponding results are reported in Tables D.1 and D.2, respectively, which are consistent with our findings.

Table D.1: Retailer Market Structure across Regions with Different Income Levels (CRs)

	CR1	CR3
Income	-0.004***	-0.003***
	(0.001)	(0.001)
Quarter FE	Yes	Yes
Observations	11,100	11,100

Note: The table presents regression results from equation (2) by replacing the main dependent variable with the sales share of the top one and three retailers in an MSA for a given quarter in Columns 1 and 2, respectively. The coefficient of interest is on income per capita (in $1000) in an MSA. All else remains the same as in Table 4. Standard errors are clustered at the MSA level. *** p<0.01, ** p<0.05, * p<0.1

Table D.2: Retailer Market Structure across Regions with Different Income Levels (Population Control)

	Sales (in $1mil.)	Chain#	Store#	Large Firm% (Store)	HHI
Income	8.482***	0.103***	2.651**	-0.007***	-0.003*
	(2.979)	(0.027)	(1.059)	(0.002)	(0.001)
Population	13.27***	0.066***	10.22***	-0.001***	-0.001***
	(2.034)	(0.009)	(0.768)	(0.000)	(0.000)
Quarter FE	Yes	Yes	Yes	Yes	Yes
Observations	11,100	11,100	11,100	11,100	11,100

Note: The table presents regression results from equation (2) by controlling for MSA-level population additionally. The coefficient of interest is on income per capita (in $1000) in an MSA. All else remains the same as in Table 4. Standard errors are clustered at the MSA level. *** p<0.01, ** p<0.05, * p<0.1

D.2 Long-run Relationship

We estimate the following regression relating income levels to retailer market structure in the long run:

$$\bar{Y}_m = \beta_0 + \boldsymbol{\beta_1} In\bar{c}ome_m + \varepsilon_m, \tag{D.1}$$

where $\bar{Y}_m$ is the long-run average of sales, total count of chains or stores, the share of large retailers (defined as the top decile of total sales or the number of store counts at the national level), or market concentration (HHI), and $In\bar{c}ome_m$ is the long-run average per capita income in msa m. The results are shown in Table D.3, which support the robustness of the main findings. Furthermore, we observe consistent patterns with CR measures, presented in Tables D.4.

Table D.3: Retailer Market Structure across Regions with Different Income Levels (Long Run)

	Sales (in \$1mil.)	Chain#	Store#	Large Firm% (Sales)	Large Firm% (Store)	HHI
Income	27.32***	0.198***	17.48***	-0.003***	-0.009***	-0.005***
	(2.921)	(0.023)	(2.135)	(0.008)	(0.001)	(0.002)
Observations	185	185	185	185	185	185

Note: The table presents regression results from equation (D.1). The coefficient of interest is on the long-run average of income per capita (in \$1000) in an MSA. The variable definitions remain the same as in Table 4, but based on long-run averages. Standard errors are clustered at the MSA level.*** p<0.01, ** p<0.05, * p<0.1

Table D.4: Retailer Market Structure across Regions with Different Income Levels (Long Run, CRs)

	CR1	CR3
Income	-0.004***	-0.003***
	(0.001)	(0.001)
Observations	185	185

Note: The table presents regression results from equation (D.1). The coefficient of interest is on the long-run average of income per capita (in \$1000) in an MSA. The variable definitions remain the same as in Table D.1, but based on long-run averages. Standard errors are clustered at the MSA level. *** p<0.01, ** p<0.05, * p<0.1

D.3 Business Dynamics Statistics (BDS)

The Business Dynamics Statistics (BDS) is a public version of administrative Census firm-level data. The data provide annual measures of business dynamics in the U.S., such as job creation and destruction, establishment births and deaths, and firm entry and exit. These data are provided for the economy overall as well as for aggregates defined by establishment or firm characteristics such as firm size and age. Furthermore, the data provide sectoral- and geographic-level information, which allows us to track business dynamics at the sector, state, county, and MSA levels.[1]

In BDS, we focus on the retail trade sector (NAICS 44–45) and measure retailer size by employment.[2] For each MSA, the Census Bureau reports the number of firms, establishments, total employment, and job creation and destruction, categorized by three firm-size bins: (i) 1–19 employees, (ii) 20–499 employees, and (iii) 500 or more employees. We define large retailers as those in the third category and, for each MSA, count the number of firms and establishments associated with them. To be consistent with the NielsenIQ, we focus on the period of 2006-2020 in BDS.

We estimate the following regression to examine cross-sectional patterns in BDS:

$$Y_{mt} = \beta_0 + \beta_1 Income_{mt} + \delta_t + \varepsilon_{mt}, \tag{D.2}$$

where Y_{mt} is the number of firms, establishments, total employment (in thousands), the share of large retailers, and the share of establishments owned by large retailers in MSA m in year t. As before, $Income_{mt}$ represents the income per capita in MSA m in year t, and δ_t denotes a year fixed effect. The results are presented in Table D.5 and are consistent with the baseline findings from NielsenIQ. They also confirm that poorer areas tend to have fewer firms and establishments, as well as a higher share of large firms and establishments.

As in the previous analysis, we examine the long-run cross-sectional relationship across MSAs using the following regression:

$$\bar{Y}_m = \beta_0 + \boldsymbol{\beta_1} \bar{Income}_m + \varepsilon_m, \tag{D.3}$$

[1] See more details at https://www.census.gov/programs-surveys/bds.html.

[2] Note that NAICS code 44–45 is more aggregated than ideal for our purposes, but it is the most disaggregated level available in BDS.

Table D.5: Retailer Market Structure (BDS)

	Firm Counts	Estab Counts	Employment	Large Firm Share	Large Estab Share
Income	128.02***	188.96***	3.002***	-0.003***	-0.001***
	(45.02)	(62.18)	(0.891)	(0.001)	(0.000)
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	5,715	5,715	5,715	5,715	5,715

Notes: The table represents regression results from equation (D.2). The coefficient of interest is the coefficient on income per capita (in $1000) in an MSA for a given year. The dependent variable is the total number of firms in Column 1, total number of establishments in Column 2, total employment size (in thousands) in Column 3, the unweighted share of large firms in Column 4, and the unweighted share of establishments associated with large firms in Column 5 in an MSA for a given year. Large firms are defined by those with 500 or more employees. Data is collected from the Business Dynamics Statistics and retailers are gathered from retail trade sector (NAICS 44-45) for 2006-2020. Standard errors are clustered at the MSA level. *** p<0.01, ** p<0.05, * p<0.1

where $\bar{Y}_m$ is the long-run average of the number of firms, establishments, total employment (in thousands), the share of large retailers, and the share of establishments owned by large retailers, and $In\bar{come}_m$ is the long-run average for the income per capita in MSA m. Table D.6 shows results that reinforce the consistency of patterns in BDS data.

Table D.6: Retailer Market Structure (BDS, Long Run)

	Firm Counts	Estab Counts	Employment	Large Firm Share	Large Estab Share
Income	137.92***	203.61***	3.210***	-0.003***	-0.001***
	(20.71)	(29.15)	(0.427)	(0.000)	(0.000)
Observations	381	381	381	381	381

Notes: The table represents regression results from equation (D.3). The variable definitions remain the same as in Table D.5, but based on long-run averages over 2006-2020 in the BDS. Standard errors are clustered at the MSA level. *** p<0.01, ** p<0.05, * p<0.1

E Robustness: Inflation and Market Concentration

E.1 Other Measures and Controls

In the main regression (3), we replace HHI with CR1 and CR3 measures for market concentration and report the results in Table E.1. The results are robust to both measures. Furthermore, we control for MSA-level population in Table E.2 and find consistent results.

Table E.1: Food Inflation across Regions (CRs)

	Inflation	Inflation	Inflation	Inflation
CR1	0.415***	0.395***	0.413***	0.404***
	(0.114)	(0.118)	(0.128)	(0.128)
Income		-0.003		-0.004**
		(0.002)		(0.002)
Chain #			-0.000	0.004
			(0.008)	(0.008)
	Inflation	Inflation	Inflation	Inflation
CR3	0.680***	0.646***	0.705***	0.690***
	(0.153)	(0.158)	(0.180)	(0.180)
Income		-0.003		-0.004**
		(0.002)		(0.002)
Chain #			0.003	0.007
			(0.008)	(0.008)
Quarter FE	Yes	Yes	Yes	Yes
Observations	10,730	10,730	10,730	10,730

Note: The table presents regression results from equation (3). The coefficient of interest is on income per capita (in thousands of $) and CR (CR1 in the top panel and CR3 in the bottom panel) in an MSA for a given quarter. The dependent variable is the geometric Laspeyres inflation rate (%) of aggregate food in an MSA for a given quarter. The last two columns additionally control for the total number of chains in the MSA. Standard errors are clustered at the MSA level. *** p<0.01, ** p<0.05, * p<0.1

Table E.2: Food Inflation across Regions (Population Control)

	Inflation	Inflation	Inflation	Inflation	Inflation
HHI	0.248**		0.253**	0.318**	0.316**
	(0.105)		(0.107)	(0.123)	(0.123)
Income		0.001	0.001		-0.001
		(0.002)	(0.002)		(0.002)
Chain #				0.020**	0.021**
				(0.009)	(0.008)
Population	-0.003***	-0.004***	-0.004***	-0.005***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Quarter FE	Yes	Yes	Yes	Yes	Yes
Observations	10,730	10,730	10,730	10,730	10,730

Note: The table presents regression results from equation (3). The coefficient of interest is on HHI and income per capita (in $1000) in an MSA for a given quarter. All specifications include the long-run average population (in 100,000s) as a control variable, measured annually using the BEA data. The dependent variable is the geometric Laspeyres inflation rate (%) of aggregate food in an MSA for a given quarter. Total number of chains is included as a control in the last two columns. Standard errors are clustered at the MSA level. *** p<0.01, ** p<0.05, * p<0.1

E.2 Long-run Relationship

Furthermore, we explore the long-run association between inflation, income level, and market concentration across MSAs with the following regression:

$$\bar{P}_m = \beta_0 + \boldsymbol{\beta_1} \bar{X}_m + \varepsilon_m, \quad \text{(E.1)}$$

where $\bar{P}_m$ is the long-run average of inflation, and $\bar{X}_m$ is the long-run average of HHI and income level in msa m. The results are shown in Table E.3, which confirms the negative association between food inflation and income as well as the positive association between food inflation and market concentration across MSAs in the long run. Also, the long-run patterns also hold for both CR1 and CR3 measures. These are shown in Table E.4.

Table E.3: Food Inflation across Regions (Long Run)

	Inflation	Inflation	Inflation	Inflation	Inflation
HHI	0.304**		0.261**	0.279**	0.267**
	(0.125)		(0.128)	(0.132)	(0.132)
Income		-0.005**	-0.004		-0.004
		(0.003)	(0.003)		(0.003)
Chain #				-0.005	0.002
				(0.008)	(0.009)
Observations	185	185	185	185	185

Note: The table presents regression results from equation (E.1) for the cross-sectional association between MSA-level inflation, income, and market concentration in the long run. The coefficient of interest is on HHI and income per capita (in $1000) in an MSA. The dependent variable is the long-run average of the food Laspeyres inflation rate. The last two columns control for the long-run average number of chains in an MSA. Standard errors are clustered at the MSA level. *** p<0.01, ** p<0.05, * p<0.1

E.3 Price Indices

In the main regression (3), we replace the dependent variable with the Laspeyres price index at the MSA level to capture cumulative price differences across MSAs. The results are similar in Table E.5. Furthermore, we replace HHI with CR1 and CR3 for market concentration, and the results remain robust, as presented in Table E.6.

Table E.4: Food Inflation across Regions (Long Run, CRs)

	Inflation	Inflation	Inflation	Inflation
CR1	0.393***	0.360**	0.375**	0.361***
	(0.120)	(0.122)	(0.123)	(0.123)
Income		-0.004		-0.004
		(0.003)		(0.003)
Chain #			-0.005	0.000
			(0.007)	(0.009)
Observations	185	185	185	185
	Inflation	Inflation	Inflation	Inflation
CR3	0.838***	0.784***	0.841***	0.818***
	(0.199)	(0.205)	(0.212)	(0.212)
Income		-0.003		-0.004
		(0.003)		(0.003)
Chain #			0.000	0.006
			(0.008)	(0.009)
Observations	185	185	185	185

Note: The table presents regression results from equation (E.1) for the cross-sectional association between MSA-level inflation, income, and market concentration in the long run. The coefficient of interest is on CR1 (in the top panel) and CR3 (in the bottom panel), as well as income per capita (in $1000) in an MSA. The dependent variable is the long-run average of the food Laspeyres inflation rate. The last two columns control for the long-run measure of the average of chains in the MSA. Standard errors are clustered at the MSA level. *** p<0.01, ** p<0.05, * p<0.1

Table E.5: Food Price Indices across Regions

	Price Index	Price Index	Price Index	Price Index	Price Index
HHI	14.47***		12.78***	12.65***	12.30***
	(3.720)		(3.737)	(4.217)	(4.206)
Income		-0.274***	-0.221**		-0.200**
		(0.104)	(0.103)		(0.087)
Chain #				-0.341	-0.120
				(0.325)	(0.309)
Quarter FE	Yes	Yes	Yes	Yes	Yes
Observations	10,915	10,915	10,915	10,915	10,915

Note: The table presents regression results from equation (3) with the dependent variable replaced by the Laspeyres price index. The coefficient of interest is on income per capita (in $1000) and HHI in an MSA for a given quarter. The last two columns additionally control for the number of chains in the MSA. Standard errors are clustered at the MSA level. *** p<0.01, ** p<0.05, * p<0.1

Table E.6: Food Price Indices across Regions (CRs)

	Price Index	Price Index	Price Index	Price Index
CR1	14.88***	13.51***	13.58***	13.11***
	(3.560)	(3.622)	(3.809)	(3.834)
Income		-0.225**		-0.190**
		(0.101)		(0.087)
Chain #			-0.402	-0.192
			(0.305)	(0.290)
Quarter FE	Yes	Yes	Yes	Yes
Observations	10,915	10,915	10,915	10,915
	Price Index	Price Index	Price Index	Price Index
CR3	19.92***	17.12***	17.02***	16.26***
	(4.919)	(4.629)	(4.648)	(4.652)
Income		-0.221**		-0.196**
		(0.098)		(0.087)
Chain #			-0.359	-0.145
			(0.299)	(0.285)
Quarter FE	Yes	Yes	Yes	Yes
Observations	10,915	10,915	10,915	10,915

Note: The table presents regression results from (3) with the dependent variable replaced by the Laspeyres price index. The coefficient of interest is on income per capita (in $1000) and CR1 (in the top panel) and CR3 (in the bottom panel) in an MSA for a given quarter. The last two columns additionally control for the total number of chains in the MSA. Standard errors are clustered at the MSA level. *** p<0.01, ** p<0.05, * p<0.1

E.4 Eggs Inflation

We estimate the following OLS regression as before, focusing specifically on egg prices:

$$P_{mt} = \beta_0 + \beta_1 X_{mt} + \delta_t + \varepsilon_{mt}, \tag{E.2}$$

where P_{mt} is the geometric Laspeyres inflation rate of eggs, X_{mt} denotes the HHI of retailer sales or income per capita in MSA m in quarter t, and δ_t represents quarter fixed effects.

The results are presented in Table E.7, which reveal a similar association between HHI, income, and egg inflation as in our main analysis for aggregate food. In particular, we find a positive and statistically significant relationship between market concentration and inflation in Columns 1 and 3, and this relationship remains robust even after controlling for the MSA-level income per capita and the number of chains in Columns 4 and 5. We also replace HHI with CR1 and CR3 measures

Table E.7: Eggs Inflation across Regions

	Inflation	Inflation	Inflation	Inflation	Inflation
HHI	0.514***		0.440***	0.488**	0.483**
	(0.150)		(0.159)	(0.185)	(0.185)
Income		-0.015***	-0.011**		-0.014**
		(0.004)	(0.004)		(0.005)
Chain #				-0.005	0.011
				(0.014)	(0.017)
Quarter FE	Yes	Yes	Yes	Yes	Yes
Observations	8,743	8,743	8,743	8,743	8,743

Note: The table represents regression results from (E.2) for the cross-sectional association between MSA-level inflation, income, and market concentration for eggs. The coefficient of interest is on HHI of retail chain's eggs sales and income per capita (in $1000) in an MSA. The dependent variable is the Laspeyres inflation rate (%) of eggs in an MSA for a given quarter. Total number of chains in eggs market is controlled in the last two columns. Standard errors are clustered at the MSA level. *** p<0.01, ** p<0.05, * p<0.1

Table E.8: Eggs Inflation across Regions (CRs)

	Inflation	Inflation	Inflation	Inflation
CR1	0.633***	0.571***	0.604***	0.594***
	(0.180)	(0.190)	(0.208)	(0.207)
Income		-0.012***		-0.013***
		(0.004)		(0.005)
Chain #			-0.008	0.008
			(0.014)	(0.017)
	Inflation	Inflation	Inflation	Inflation
CR3	1.083***	0.956**	1.027**	0.975**
	(0.353)	(0.385)	(0.403)	(0.403)
Income		-0.011**		-0.012**
		(0.004)		(0.005)
Chain #			-0.009	0.005
			(0.014)	(0.016)
Quarter FE	Yes	Yes	Yes	Yes
Observations	8,743	8,743	8,743	8,743

Note: The table represents regression results from Equation (E.2) by replacing HHI with CR1 (in the top panel) and CR3 (in the bottom panel) for eggs. The coefficient of interest is on CR1 and CR3 of retail chain's eggs sales, as well as income per capita (in thousands of $) in an MSA. The dependent variable is the geometric Laspeyres inflation rate (%) of eggs in an MSA for a given quarter. Total number of chains in eggs market is controlled in the last two columns. Standard errors are clustered at the MSA level. *** p<0.01, ** p<0.05, * p<0.1

for market concentration in eggs market. The results are shown in Table E.8 and are robust to both measures.

While these results shed light on the link between inflation and market concentration, they do not establish causality. The OLS estimate of β_1 may be subject to endogeneity bias. For instance, the observed relationship could be demand-driven: consumers in MSAs with higher HHI may disproportionately purchase goods experiencing higher inflation. Alternatively, income-related differences in consumer behavior could play a role: richer MSAs may have consumers who are more sensitive to price changes. Such heterogeneity in consumer behavior may have led retailers in wealthier areas to raise prices at slower rates. Another potential explanation is a supply-side story, where poorer MSAs have fewer stores and varieties, which weakens competition and allows retailers to raise prices more aggressively. There may also be a potential sorting of certain types of retailers into poorer MSAs, those that are more flexible in increasing prices, compared to retailers operating in richer areas. To isolate whether the effect we observe is driven by supply-side or demand-side forces, we exploit the 2014–2015 bird flu outbreak as an exogenous supply shock in Section 4 in the main text.

F Eggs Market

Note that eggs markets in general tend to be local and regional. For instance, Cal-Maine Foods, which is the largest producer and marketer of eggs in the U.S., primarily operates in regional markets. See Figure F.1 that plots the locations of Cal-Maine Foods, which are mainly concentrated in Southern areas.

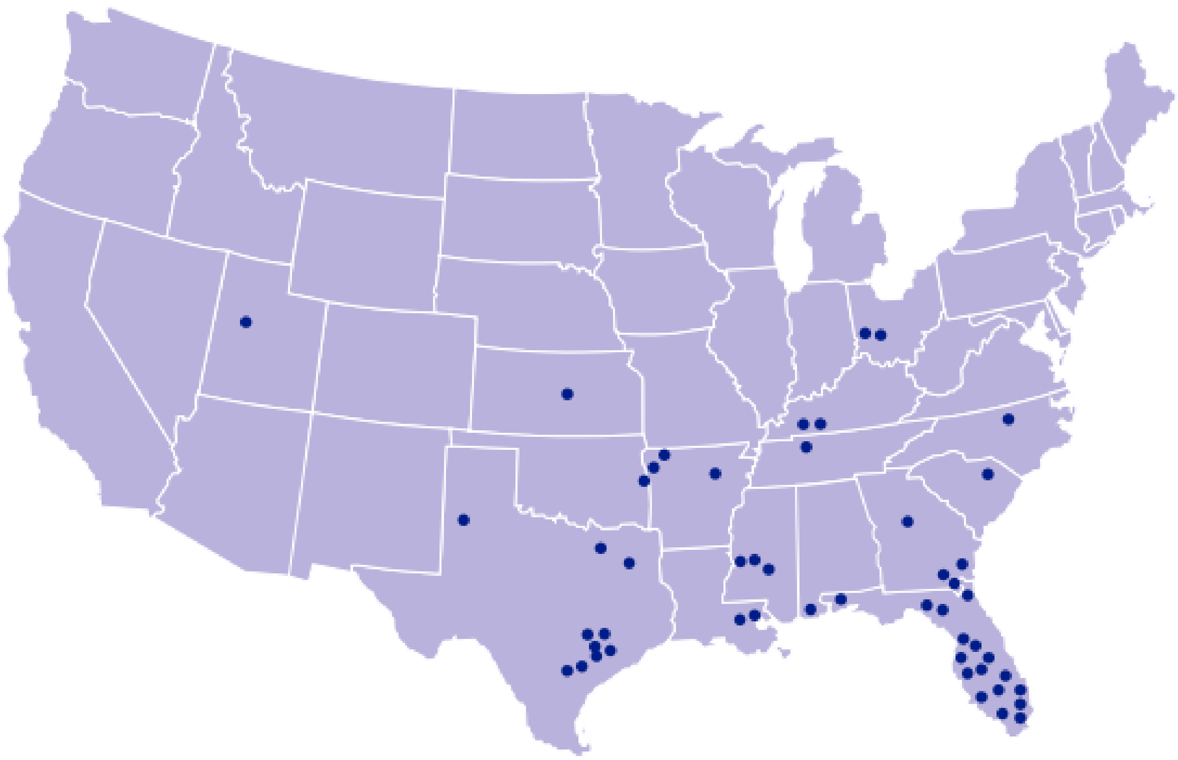

Figure F.1: Location of Cal-Maine Foods

Notes: The figure represents the local locations of Cal-Maine Foods, which is the largest national eggs producing company in the United States.

G Robustness: Triple-Difference Estimation

G.1 Terciles of HHI

We use terciles of the HHI measure to assess the robustness of our main triple-difference results. Specifically, we estimate the following regression:

$$P_{mt} = \beta_0 + \beta_1(\text{Post}_t \times \text{HighHHI}_m) + \beta_2(\text{Post}_t \times \text{MidHHI}_m)$$

$$+ \beta_3(\text{Bird Flu}_m \times Post_t) + \beta_4(\text{Bird Flu}_m \times \text{Post}_t \times \text{MidHHI}_m)$$
$$+ \beta_5(\text{Bird Flu}_m \times \text{Post}_t \times \text{HighHHI}_m) + \delta_m + \delta_t + \varepsilon_{mt}, \quad \text{(G.1)}$$

where subscript m indexes MSAs and t indexes quarters. BirdFlu_m and Post_t are defined the same as before. We classify MSAs into terciles based on the distribution of egg-market sales concentration (HHI) in 2014Q3. The bottom tercile (LowHHI) comprises the one-third of MSAs with the lowest HHI and serves as the reference group.[3] HighHHI_m is an indicator for the MSAs in the top tercile, and MidHHI_m is an indicator for those in the middle tercile. P_{mt} denotes the geometric Laspeyres quarterly inflation rate for eggs in MSA m in quarter t. MSA and quarter fixed effects, δ_m and δ_t, are included as before, and ε_{mt} is the error term.

The results are presented in Table G.1. Column 1 pools all quarters within the two-year window and shows that, among treated MSAs, those in the top tercile of retail market concentration experience 2.3 percentage points higher inflation, on average, than those in the bottom tercile. This effect is statistically significant at the 1% level. Columns 2 and 3 decompose this effect into the inflationary and deflationary periods, respectively. Restricting the sample to the inflationary period, Column 2 shows that treated MSAs in the top tercile exhibit 4.7 percentage points higher inflation, on average, than treated MSAs in the bottom tercile, significant at the 1% level. In contrast, Column 3 shows no evidence that highly concentrated treated MSAs experience larger price declines during the deflationary period. The estimated effect is positive but statistically insignificant, suggesting persistence in the initial inflationary response. These results are consistent with our main findings.

Furthermore, we confirm robustness for the UPC-MSA-quarter level analysis by using terciles of HHI. We estimate the following regression, where the dependent variable is the log change in UPC-level prices within egg market:

$$\Delta \ln price_{umt} = \beta_0 + \beta_1(\text{Post}_t \times \text{HighHHI}_m) + \beta_2(\text{Post}_t \times \text{MidHHI}_m)$$
$$+ \beta_3(\text{Bird Flu}_m \times Post_t) + \beta_4(\text{Bird Flu}_m \times \text{Post}_t \times \text{MidHHI}_m)$$
$$+ \beta_5(\text{Bird Flu}_m \times \text{Post}_t \times \text{HighHHI}_m) + \delta_u + \delta_m + \delta_t + \varepsilon_{umt}, \quad \text{(G.2)}$$

[3] We fix HHI to its 2014Q3 value, the quarter preceding the outbreak, to mitigate endogeneity concerns and isolate the effect of the supply shock on price dynamics. Results are robust to fixing HHI to its two-year average over 2012Q4–2014Q3.

Table G.1: Triple Difference Estimator (Eggs)

	Inflation	Inflation	Inflation
Bird Flu × Post × HighHHI	0.023***	0.047***	0.015
	(0.006)	(0.014)	(0.012)
Bird Flu × Post × MidHHI	0.003	0.023**	-0.005
	(0.009)	(0.010)	(0.016)
Bird Flu × Post	-0.012**	0.016**	-0.038***
	(0.005)	(0.008)	(0.005)
Post × HighHHI	-0.003	-0.002	-0.002
	(0.002)	(0.004)	(0.006)
Post × MidHHI	0.000	0.000	0.002
	(0.002)	(0.004)	(0.006)
Sample Periods	All	Inflation	Deflation
Quarter FE	Yes	Yes	Yes
MSA FE	Yes	Yes	Yes
Observations	3,145	1,850	1,295

Note: The table represents regression results from equation (G.1). The coefficient of interest is the interaction of Bird Flu, Post, and High HHI. Bird Flu is a binary variable that takes the value of one for MSAs in which egg farmers culled their layers during the 2014-2015 bird flu episode, and Post is a binary variable that takes the value of one in the post-shock period after 2014Q4. High HHI is an indicator for the top tercile MSAs, and Mid HHI is an indicator for the mid tercile MSAs in the distribution of sales HHI in 2014Q3. The sample period ranges from 2012Q4 to 2016Q4. Inflationary and deflationary periods are determined by the national price index of eggs. Column 1 pools all periods together, Column 2 only considers the inflationary period, and Column 3 only considers the deflationary period. MSA and quarter fixed effects are included across all specifications. Standard errors are clustered at the MSA level. *** p<0.01, ** p<0.05, * p<0.1

where $\Delta \ln price_{umt}$ denotes the log difference in the price of UPC u in MSA m between quarters $t-1$ and t. The UPC fixed effects, δ_u, account for regional variation in consumption baskets by ensuring that price changes are identified within identical products across regions. All other terms are defined as in equation (G.1).

Table G.2 reports the UPC-level results. In Column 1, pooling all quarters, we find that following the bird flu shock, egg prices in exposed MSAs in the highest concentration tercile increased by an additional 1 percentage point relative to exposed MSAs in the bottom tercile within the same UPCs. This estimate is statistically significant at the 1 percent level. Restricting the sample to the inflationary period, Column 2 shows that the triple interaction for the highest HHI tercile remains positive and significant at the 1 percent level. Quantitatively, prices rose by an additional 2 percentage points in highly concentrated exposed MSAs relative to less concentrated exposed

Table G.2: Triple Difference Estimator (Eggs, UPC-level)

	$\Delta \ln$ Price	$\Delta \ln$ Price	$\Delta \ln$ Price
Bird Flu × Post × HighHHI	0.010***	0.020***	-0.007
	(0.004)	(0.006)	(0.008)
Bird Flu × Post × MidHHI	0.005	0.019***	-0.012
	(0.004)	(0.005)	(0.008)
Bird Flu × Post	-0.006*	0.000	-0.013*
	(0.003)	(0.005)	(0.007)
Post × HighHHI	-0.004***	-0.005	-0.002
	(0.002)	(0.003)	(0.003)
Post × MidHHI	-0.001	-0.003	0.002
	(0.002)	(0.003)	(0.004)
Sample Periods	All	Inflation	Deflation
Quarter FE	Yes	Yes	Yes
MSA FE	Yes	Yes	Yes
UPC FE	Yes	Yes	Yes
Observations	145,989	84,418	61,470

Note: The table represents regression results from equation (G.2). The dependent variable is the log price difference of product u in MSA m between quarters $t-1$ and t. All descriptions remain the same as before, except that MSA, UPC, and quarter fixed effects are included across all specifications. Standard errors are clustered at the MSA level. *** p<0.01, ** p<0.05, * p<0.1

MSAs for identical egg products. In Column 3, focusing on the deflationary period, the estimated effect is statistically insignificant, suggesting persistence in the inflationary response rather than symmetric price reversals.

G.2 CR Measures

To test the robustness of the triple-difference regression in equation (5), we replace HHI with CR1 and CR3 in the egg market. The results are robust, as displayed in Table G.3.

G.3 Neighboring Treated MSAs

We incorporate five additional neighboring MSAs around the affected areas using MSA maps provided by the Census Bureau.[4] These MSAs are listed in Table G.4. We then re-estimate regressions based on equation (4) and equation (5) including these additional treated MSAs. The results, presented in Tables G.5 and G.6, are consistent with our baseline findings.

[4]See details at https://www.census.gov/geographies/reference-maps/2020/demo/state-maps.html.

Table G.3: Triple Difference Estimator (CRs)

	Inflation	Inflation	Inflation
Bird Flu × Post × CR1	0.052***	0.093***	0.044*
	(0.010)	(0.022)	(0.024)
Bird Flu × Post	-0.037***	-0.021	-0.064***
	(0.008)	(0.013)	(0.015)
CR1 × Post	-0.010*	-0.008	-0.006
	(0.005)	(0.008)	(0.013)
Bird Flu × CR1	-0.139	-0.204*	-0.092
	(0.090)	(0.110)	(0.056)
CR1	0.046**	0.060**	0.045
	(0.022)	(0.027)	(0.028)
	Inflation	Inflation	Inflation
Bird Flu × Post × CR3	0.098***	0.191***	0.099*
	(0.030)	(0.063)	(0.055)
Bird Flu × Post	-0.092***	-0.134**	-0.125***
	(0.028)	(0.057)	(0.048)
CR3 × Post	-0.023*	-0.021	-0.029
	(0.012)	(0.021)	(0.030)
Bird Flu × CR3	0.003	0.037	-0.194
	(0.120)	(0.232)	(0.150)
CR3	0.049	0.038	0.071
	(0.043)	(0.057)	(0.088)
Sample Periods	All	Inflation	Deflation
Quarter FE	Yes	Yes	Yes
MSA FE	Yes	Yes	Yes
Observations	3,145	1,850	1,295

Note: The table represents regression results from equation (5) by replacing HHI with CR1 or CR3. The coefficient of interest is the interaction of Bird Flu, Post, and CR1 (in the top panel) or CR3 (in the bottom panel). CR1 (CR3) is the concentration ratio of the top 1 (top 3) retail chain's sales of eggs within an MSA, of which value is fixed to 2014Q3 for all quarters in the post period. All else descriptions remain the same as in Table 7. Standard errors are clustered at the MSA-level. *** p<0.01, ** p<0.05, * p<0.1

G.4 Cost-related Hypothesis

An alternative hypothesis for spatial disparities in inflation revolves around cost differentials. If marginal costs in lower-income areas rise faster than in higher-income areas, this can contribute to higher inflation in those regions, irrespective of the market structure of retailers. To test this hypothesis, we use wage data for retail workers from the American Community Survey (ACS) and

Table G.4: Neigboring MSAs around the Impacted MSAs

#	MSA	State
1	CEDAR RAPIDS-WATERLOO & DUBUQUE	IA
2	MILWAUKEE	WI
3	LA CROSSE-EAU CLAIRE	WI
4	LINCOLN & HASTINGS-KEARNY	NE
5	DULUTH-SUPERIOR	MN-WI

Note: The table provides the set of neighboring MSAs around the impacted MSAs.

Table G.5: Difference-in-Differences Estimator (Neighbor MSAs)

	Inflation	Inflation	Inflation	Abs. Inflation
Bird Flu $\times$ Post	-0.003	0.037***	-0.033***	0.047***
	(0.004)	(0.006)	(0.007)	(0.005)
Sample Periods	All	Inflation	Deflation	All
Quarter FE	Yes	Yes	Yes	Yes
MSA FE	Yes	Yes	Yes	Yes
Observations	3,145	1,850	1,295	3,145

Note: The table represents regression results from equation (4), where the treated MSAs include five additional neighboring MSAs around the impacted areas. All else descriptions remain the same as in the main Table 6. *** p<0.01, ** p<0.05, * p<0.1

compare wage levels and growth across MSAs with varying income levels from 2006 to 2020.[5] We link it to BDS data to control for the composition of firms, which may vary across regions.

We estimate the following two regressions to examine wage variation in wage levels and wage growth across MSAs with different income levels:

$$w_{mt} = \beta_0 + \beta_1 Income_{mt} + X'_{mt}\gamma + \delta_t + \varepsilon_{mt} \tag{G.3}$$

$$\Delta \ln w_{mt} = \beta_0 + \beta_1 Income_{mt} + X'_{mt}\gamma + \delta_t + \varepsilon_{mt}, \tag{G.4}$$

where w_{mt} ($\Delta \ln w_{mt}$) is the average wage level (or growth) in the retail sector in MSA m and year t, $Income_{mt}$ is the income per capita of MSA m in year t, and X_{mt} is a vector of MSA-level characteristics, including the share (or growth of the share) of college workers in the retail sector, and the share of large retailers (with 500 or more employees) or establishments associated with large retailers, and δ_t is a year fixed effect.

[5] We restrict our sample to prime-age workers (aged 20-55) that earn more than \$5000 and work at least 40 weeks per year in the retail sector.

Table G.6: Triple Difference Estimator (Neighbor MSAs)

	Inflation	Inflation	Inflation
Bird Flu × Post × HHI	0.049***	0.074***	0.056**
	(0.008)	(0.019)	(0.024)
Bird Flu × Post	-0.028***	-0.001	-0.062***
	(0.007)	(0.010)	(0.012)
HHI × Post	-0.011**	-0.008	-0.010
	(0.005)	(0.008)	(0.011)
Bird Flu × HHI	-0.129	-0.198	-0.002
	(0.087)	(0.134)	(0.072)
HHI	0.039	0.054*	0.031
	(0.025)	(0.030)	(0.041)
Sample Periods	All	Inflation	Deflation
Quarter FE	Yes	Yes	Yes
MSA FE	Yes	Yes	Yes
Observations	3,145	1,850	1,295

Note: The table represents regression results from equation (5), where the treated MSAs include five additional neighboring MSAs around the impacted areas. All else descriptions remain the same as in Table 7. *** p<0.01, ** p<0.05, * p<0.1

In Table G.7, the top and bottom panels present the results for the average wage levels and growth, respectively. These results reveal that the average wage level is generally lower in lower-income areas, even after controlling for the composition of skills and the share of large firms or establishments in retail sector. However, the second panel suggests there are no significant patterns in wage growth across MSAs by income level. While the data are aggregated, they provide suggestive evidence that retailer wages are neither higher nor growing faster in areas with lower income or a higher share of large retailers, which helps rule out other cost factors.

G.5 Commodity Cost Shocks in Coffee Market

We provide consistent evidence in the coffee market by exploiting fluctuations in commodity prices, following Sangani (2024). Given that the United States does not produce a meaningful amount of coffee, we treat changes in the commodity price of Arabica coffee as exogenous to U.S. retail conditions. We measure the global price of coffee (Arabica) using the IMF Commodity Database.[6] Our identification strategy exploits time-series variation in global coffee prices. To control for

[6] The IMF Series ID for coffee is PCOFFOTMUSDM.

Table G.7: Average Wage Levels and Growth in Retail Sector across MSAs

	Wage	Wage	Wage	Wage	Wage	Wage
Income	3.785***	2.871***	3.000***	3.770***	2.371***	2.822***
	(0.508)	(0.382)	(0.427)	(0.532)	(0.293)	(0.390)
College Share		2.761***			2.441***	2.780***
		(0.343)			(0.289)	(0.343)
Large Firm Share			-2.437***		-1.883***	
			(0.360)		(0.261)	
Large Estab Share				-0.126		-0.368
				(0.393)		(0.319)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,868	2,868	2,868	2,868	2,868	2,868
	ΔWage	ΔWage	ΔWage	ΔWage	ΔWage	ΔWage
Income	- 0.020	-0.015	-0.023	-0.023	-0.017	-0.018
	(0.014)	(0.013)	(0.014)	(0.014)	(0.082)	(0.014)
ΔCollege Share		0.082***			0.082***	0.082***
		(0.008)			(0.008)	(0.008)
Large Firm Share			-0.008		-0.006	
			(0.021)		(0.020)	
Large Estab Share				-0.025		-0.025
				(0.028)		(0.025)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,580	2,566	2,580	2,580	2,566	2,566

Note: The table presents MSA-level wage regression results from equations (G.3) and (G.4). The dependent variable in the top panel is the average wage (in $1000), while the bottom panel has the log difference in the average wages within retail sector in an MSA in a given a year. The sample period spans from 2006 to 2020 with year fixed effects included. The main independent variable is the MSA-level income per capita (in thousands of $). In Columns 2, 5, 6, the share of college-educated retailer workers is included in the top panel, and its growth is included in the bottom panel as a control. In Columns 3 and 5, the share of large retailers (%, those with 500 employees or more) is controlled, and in Columns 4 and 6, the share of establishments associated with these large retailers is controlled within an MSA in a given year. *** p<0.01, ** p<0.05, * p<0.1

differences in basket composition, we conduct analysis at the UPC-quarter-MSA level and include UPC and MSA fixed effects. Specifically, we estimate the following regression:

$$\begin{aligned}\Delta \log p_{umt} = {} & \beta_0 \,\Delta \log c_t + \beta_1 \,\text{MidHHI}_{mt} + \beta_2 \,\text{HighHHI}_{mt} \\ & + \beta_3 \,(\Delta \log c_t \times \text{MidHHI}_{mt}) + \beta_4 \,(\Delta \log c_t \times \text{HighHHI}_{mt}) \\ & + \alpha_u + \gamma_m + \varepsilon_{umt}, \end{aligned} \tag{G.5}$$

Table G.8: Coffee price pass-through and retail market concentration across MSAs

	Δ ln Price	Δ ln Price	Δ ln Price
$\Delta \log c_t$	0.073***	0.073***	0.050***
	(0.003)	(0.006)	(0.005)
MidHHI $\times$ $\Delta \log c_t$	0.002	0.009	-0.008
	(0.005)	(0.009)	(0.009)
HighHHI $\times$ $\Delta \log c_t$	0.013***	0.026***	-0.009
	(0.005)	(0.008)	(0.008)
MidHHI	0.001	-0.002	0.000
	(0.001)	(0.002)	(0.002)
HighHHI	-0.000	-0.005**	0.000
	(0.001)	(0.002)	(0.002)
Sample Periods	All	Positive Cost	Negative Cost
MSA FE	Yes	Yes	Yes
UPC FE	Yes	Yes	Yes
Observations	4,394,667	2,557,907	1,836,250

Notes: The table reports regression results from equation (G.5). The coefficient of interest is the interaction of High HHI and $\Delta \log c_t$. High HHI is an indicator for the top tercile MSAs, and Mid HHI is an indicator for the mid tercile MSAs in the distribution of sales HHI each quarter. The dependent variable is the log price difference of product u in MSA m between quarters t and $t+4$. Positive cost shock period contains quarters with positive log price changes, and negative cost shock period includes those with zero or negative log price changes. Column 1 pools all periods together, Column 2 only considers the positive-shock period, and Column 3 only considers the negative-shock period. The sample period ranges from 2006Q1 to 2020Q3. All specifications include UPC and MSA fixed effects. Standard errors are clustered at the MSA level. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

where $\Delta \log p_{umt}$ denotes the change in the log price of UPC u in MSA m between quarters t and $t+4$. We classify MSAs into terciles based on the distribution of coffee-market HHI in each quarter. As before, the bottom tercile (LowHHI) comprises the one-third of MSAs with the lowest HHI and serves as the reference group. $\Delta \log c_t$ corresponds to the log change in the global Arabica coffee price between quarters t and $t+4$. We estimate the regression with our pooled sample, for periods of positive cost shocks (quarters in which the global coffee price increases between t and $t+4$, with positive log price changes), and for periods of negative cost shocks (quarters in which the global coffee price weakly decreases over the same horizon, with zero or negative log price changes).

In Table G.8, we report estimates of pass-through from global Arabica coffee prices to U.S. retail coffee prices. For the baseline group (LowHHI), a 1 percent increase in the global coffee price raises retail prices by 0.073 percent (Column 1). The estimated pass-through is 0.073 during positive cost shocks (Column 2) and declines to 0.05 during negative cost shocks (Column 3).

We then examine heterogeneity by local concentration through the interaction terms $\Delta \log c_t \times$ MidHHI$_{mt}$ and $\Delta \log c_t \times$ HighHHI$_{mt}$. The coefficients on $\Delta \log c_t \times$ MidHHI$_{mt}$ are statistically insignificant across specifications. In contrast, the interaction with HighHHI$_{mt}$ is positive and significant in the pooled sample (Column 1) and during positive cost shocks (Column 2). In Column 1, a 1 percent increase in the global coffee price leads to an additional 0.013 percent increase in retail prices in MSAs in the top tercile of concentration relative to those in the bottom tercile. In Column 2, positive cost shock periods, a 1 percent increase in the global coffee price leads to an additional 0.026 percent increase in retail prices in MSAs in the top tercile of concentration relative to those in the bottom tercile.

Overall, these results indicate stronger pass-through in more concentrated retail markets. Also, the higher pass-through is only observed during periods of rising costs and not during subsequent cost declines. This implies that even temporary cost shocks can generate persistent differences in local price levels. These patterns are consistent with our findings in the egg market.

References

Sangani, K., 2024. Pass-through in levels and the incidence of commodity shocks. Working paper, Stanford University.