



PUEY UNGPHAKORN INSTITUTE
FOR ECONOMIC RESEARCH

Price Setting Behavior in Thailand: Evidence from Micro CPI Data

Tosapol Apaitan, Piti Disyatat, Pym Manopimoke

19 MARCH 2018

- ▶ A better understanding of individual price setting behavior in Thailand is important towards:
 - ▶ quantifying the real effects of monetary policy shocks
 - ▶ designing appropriate policy responses
 - ▶ determining the optimal inflation target
 - ▶ distinguishing between different macroeconomic models for inflation

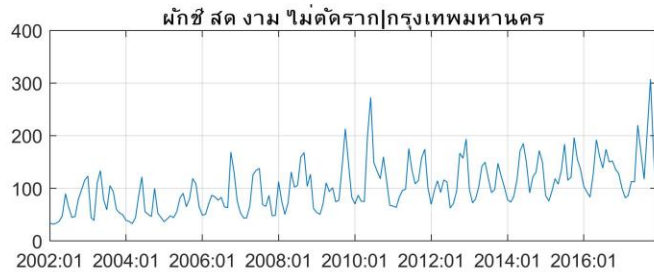
- ▶ USA: Bils and Klenow (2004), Klenow and Krysvtov (2008), Nakamura and Steinsson (2008)
- ▶ Euro Area: Baudry et al. (2004), Aucremanne and Dhyne (2004), Fabiani et al. (2006), Dhyne et al. (2005)
- ▶ Japan: Saita et al. (2006)
- ▶ Mexico: Gagnon (2006), Kochen (2016)
- ▶ Brazil: Gouvea (2007)
- ▶ Chile: Medina et al. (2007)

Roadmap

- ▶ Data Overview
- ▶ Patterns of Price Changes
- ▶ Geographical Dimension of Prices
- ▶ Takeaways

Data Overview

Examples of price trajectories for individual items



Data Overview

6

Description of Dataset

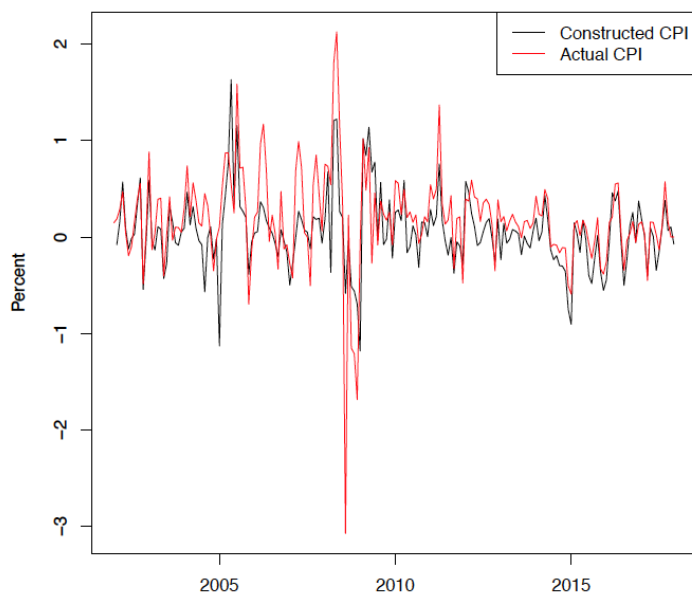
Number of Items	53,785
Number of Products	8,317
Number of Entry Level Items	445
Number of Provinces	77
Sample Period	2002M1-2017M12

Coverage of the Consumer Price Index

Category	Dataset Coverage (ELI Count)	Actual Share (ELI count)
Food & Non-Alcoholic Beverages	33.48 (175)	33.48 (175)
Apparel & Footwear	3.03 (53)	3.06 (54)
Housing & Furnishing	8.73 (61)	24.14 (62)
Medical & Personal Care	6.54 (63)	6.54 (63)
Transportation & Communication	25.53 (47)	25.54 (49)
Recreation & Education	5.81 (42)	6.03 (43)
Tobacco & Alcoholic Beverages	1.20 (4)	1.20 (4)
Total	84.33 (445)	100 (450)

Economic Sector	Dataset Coverage (ELI Count)	Actual Share (ELI count)
Core	57.42 (307)	73.09 (312)
Control	31.85 (96)	31.85 (97)
Service	22.42 (89)	38.06 (93)
Durable	9.09 (46)	24.50 (47)
Total	84.33 (445)	100 (450)

Actual and Constructed CPI Inflation

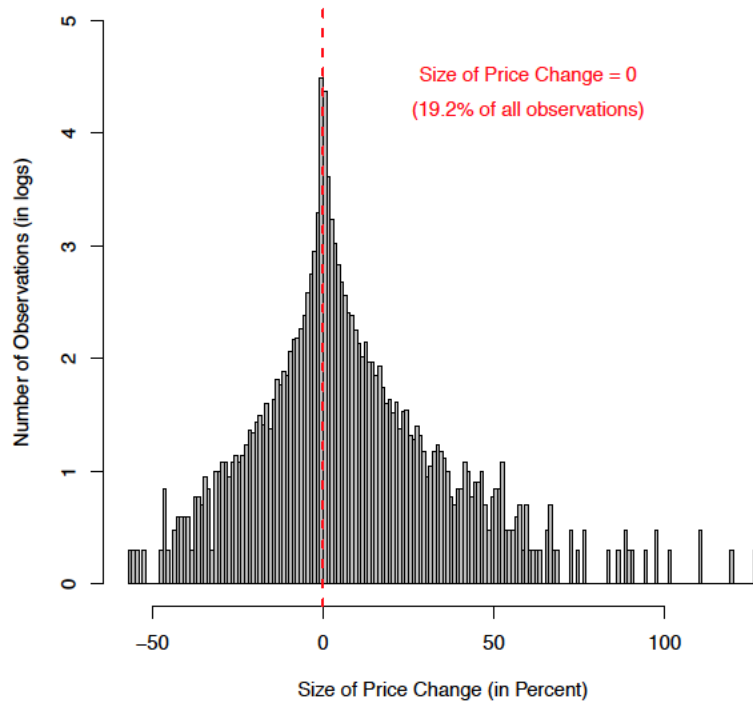


Source: Ministry of Commerce, Author's calculation

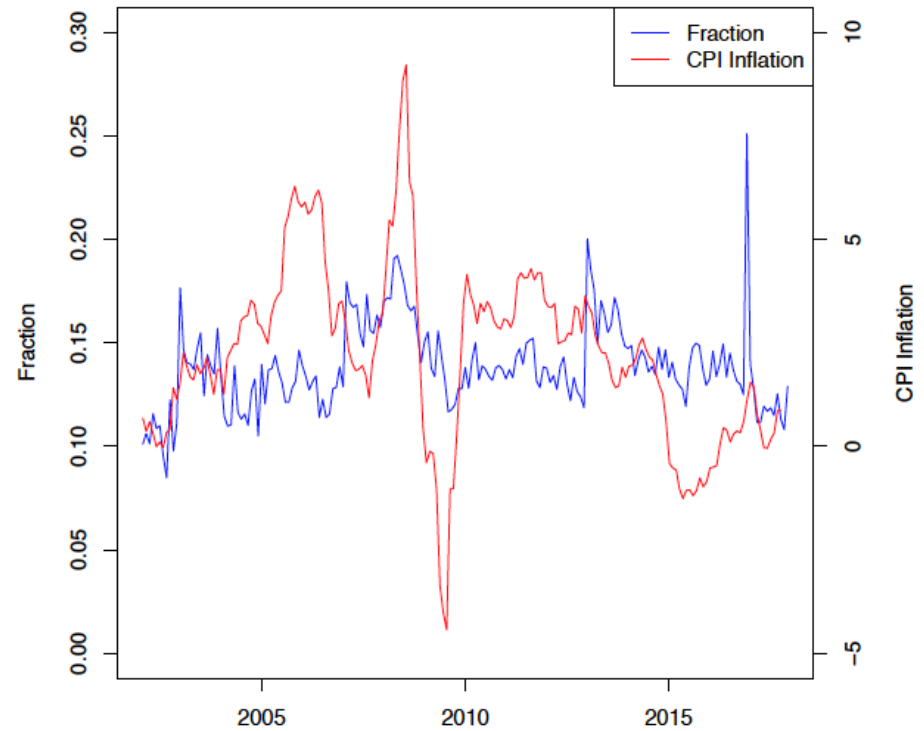
Patterns of Price Changes

Overview of Price Changes

Distribution of Size of Price Changes



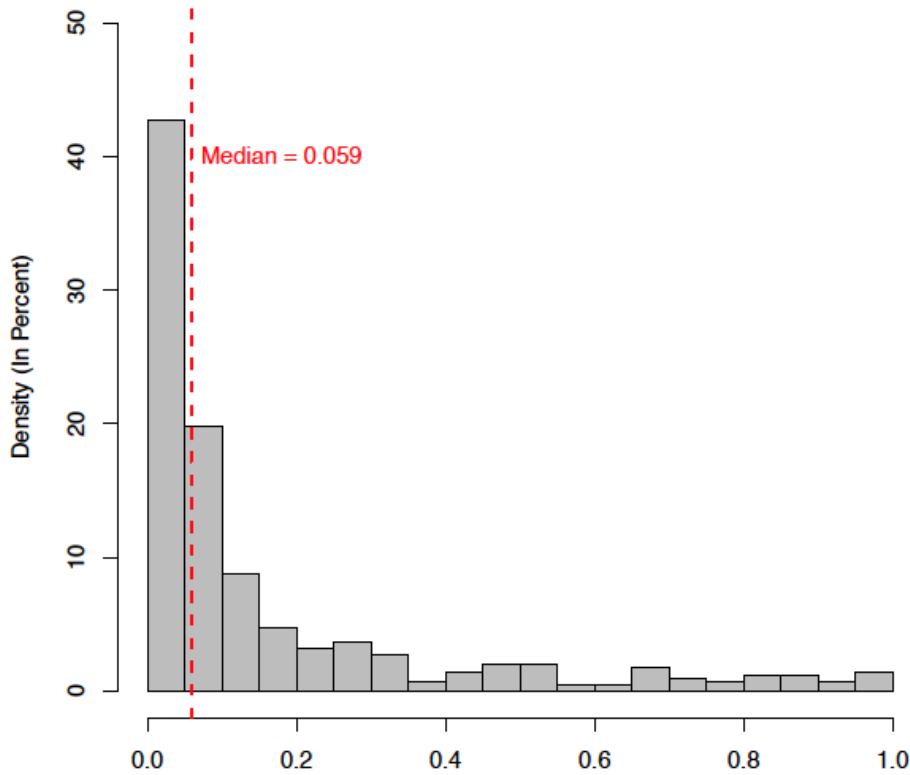
Fraction of Price Changes and CPI Inflation



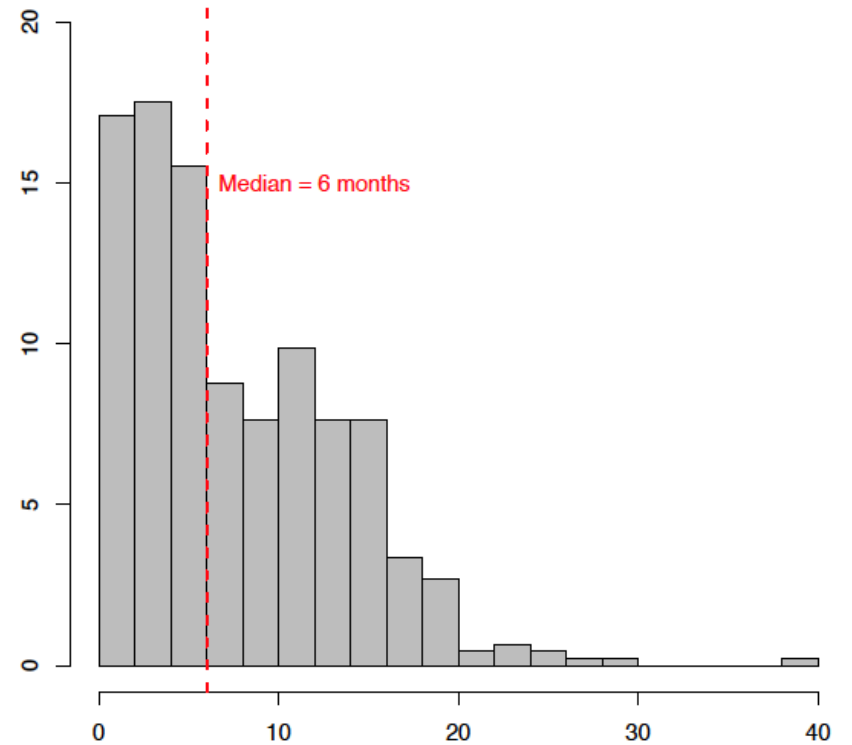
Source: Ministry of Commerce, Author's calculation

Distribution of Price Changes

Distribution of the frequency of price changes



Distribution of the duration of price changes



Frequency and Duration of Price Changes

Category	Mean Frequency	Implied Mean Duration (months)	Mean Duration (months)
Food & Non-Alcoholic Beverages	0.23	3.91	5.47
Apparel & Footwear	0.03	29.37	13.85
Housing & Furnishing	0.13	7.37	6.57
Medical & Personal Care	0.07	13.03	10.10
Transportation & Communication	0.29	2.86	7.25
Recreation & Education	0.04	22.88	8.79
Tobacco & Alcoholic Beverages	0.11	8.70	7.17
Total CPI	0.20	4.40	7.04

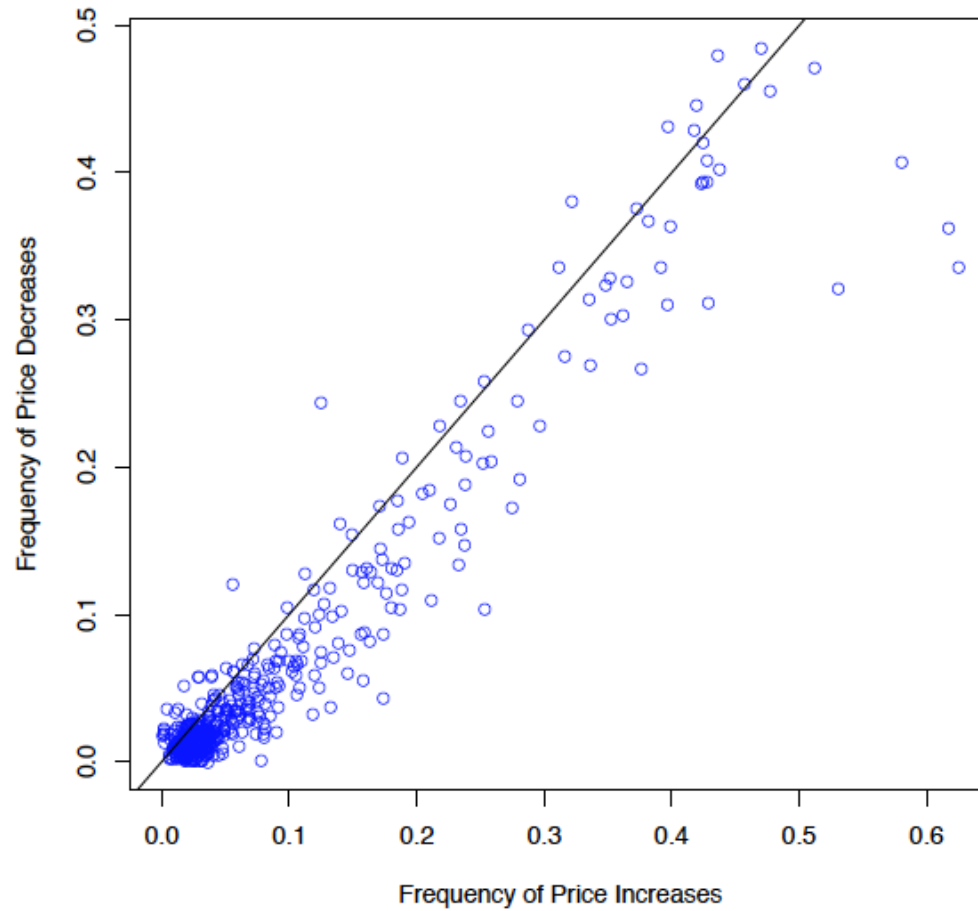
Sector	Mean Frequency	Implied Mean Duration (months)	Mean Duration (months)
Core	0.06	15.13	9.16
Non-core	0.50	1.44	2.50
Control	0.34	2.45	5.28
Non-Control	0.12	7.60	8.10
Service	0.06	16.88	9.72
Non-Service	0.26	3.38	6.07
Durables	0.07	14.38	8.43
Non-Durables	0.22	4.03	6.87
Total CPI	0.20	4.40	7.04

International Comparison

Country	Mean Duration (months)
USA	6.8-7.7
Euro Area	13
UK	10.6
Italy	10.8
France	5.9-7.2
Finland	5.3-6.1
Mexico	6.6-7.9
Brazil	2.14
Chile	1.6-2.5
Turkey	1.6-1.9

Directional Price Changes

Frequency of price increases and decreases



Directional Price Changes

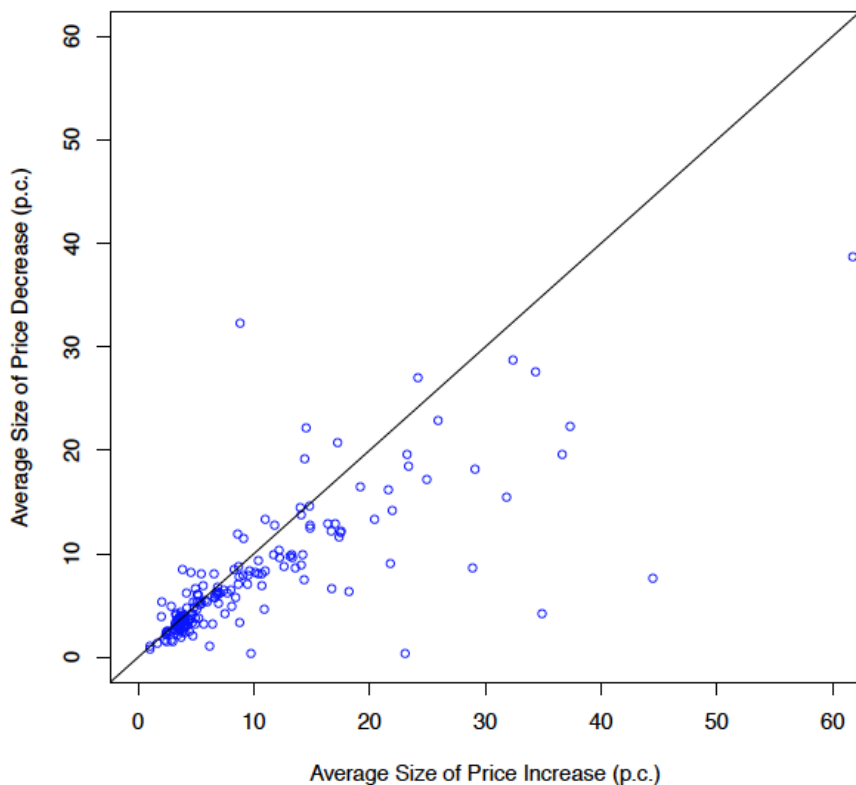
13

Category	Fraction Increase (pc.)	Mean Duration Increase (months)	Mean Duration Decrease (months)
Food & Non-Alcoholic Beverages	57.3	7.94	13.38
Apparel & Footwear	65.4	18.08	18.85
Housing & Furnishing	56.5	8.69	10.90
Medical & Personal Care	59.4	11.28	13.94
Transportation & Communication	52.8	10.59	10.26
Recreation & Education	64.9	11.59	10.58
Tobacco & Alcoholic Beverages	82.2	10.68	17.26
Total	56.4	9.73	12.29

Sector	Fraction Increase (pc.)	Mean Duration Increase (months)	Mean Duration Decrease (months)
Core	66.7	12.13	15.31
Non-core	56.5	3.80	4.71
Control	53.1	7.19	8.33
Non-Control	59.4	10.84	14.09
Service	57.5	14.30	13.87
Non-Service	55.7	7.73	11.21
Durables	70.6	10.36	11.50
Non-Durables	57.2	9.34	11.95
Total CPI	56.4	9.73	12.29

Size of Price Changes

Size of price increases and decreases



Average Size of Price Change by Category

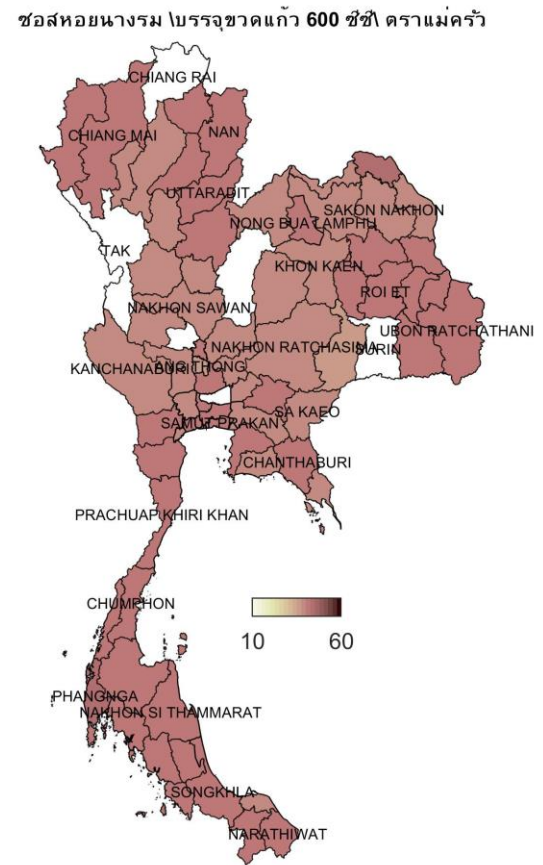
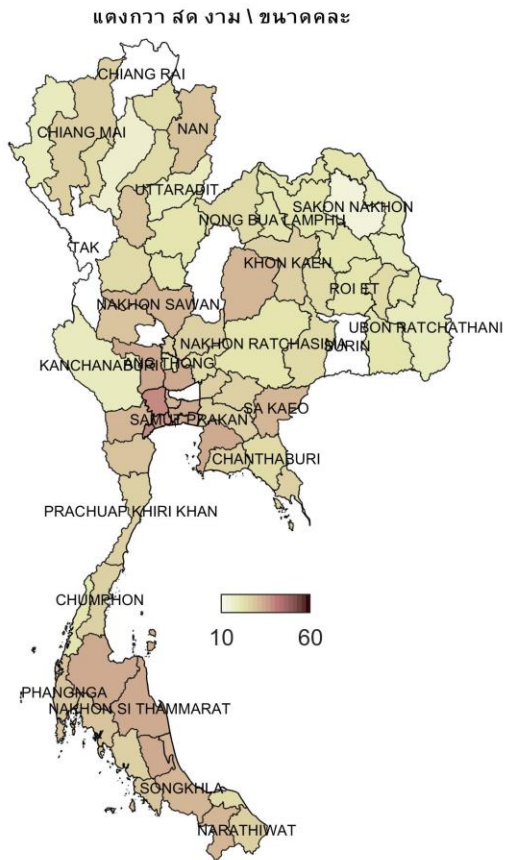
	Price Increase (p.c.)	Price Decrease (p.c.)
Food & Non-Alcoholic Beverages	6.84	5.66
Apparel & Footware	14.11	14.14
Housing & Furnishing	16.42	12.87
Medical & Personal Care	10.80	7.91
Transportation & Communication	16.02	8.31
Recreation & Education	29.78	20.47
Tobacco & Alcoholic Beverages	4.96	1.97
Total	10.37	7.74

Average Size of Price Change by Economic Sector

	Price Increase (p.c.)	Price Decrease (p.c.)
Core	14.03	10.05
Non-core	5.35	4.57
Control	10.19	7.94
Non-control	10.49	7.62
Service	26.74	16.45
Non-service	6.89	5.89
Durables	4.92	6.76
Non-Durables	10.64	7.79
Total	10.37	7.74

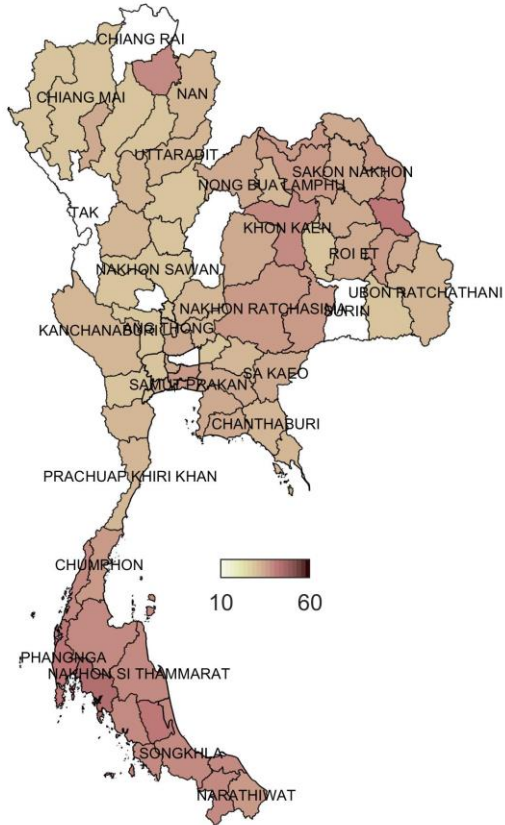
Geographical Dimension of Prices

National Products (1)

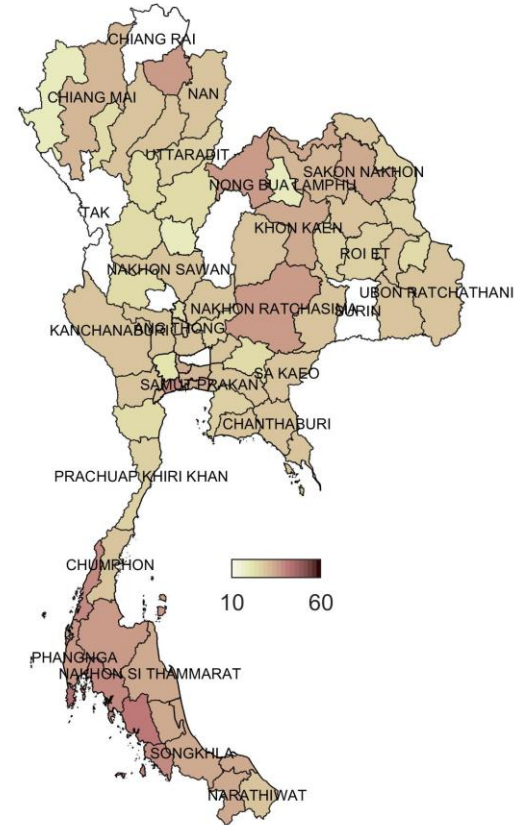


National Products (2)

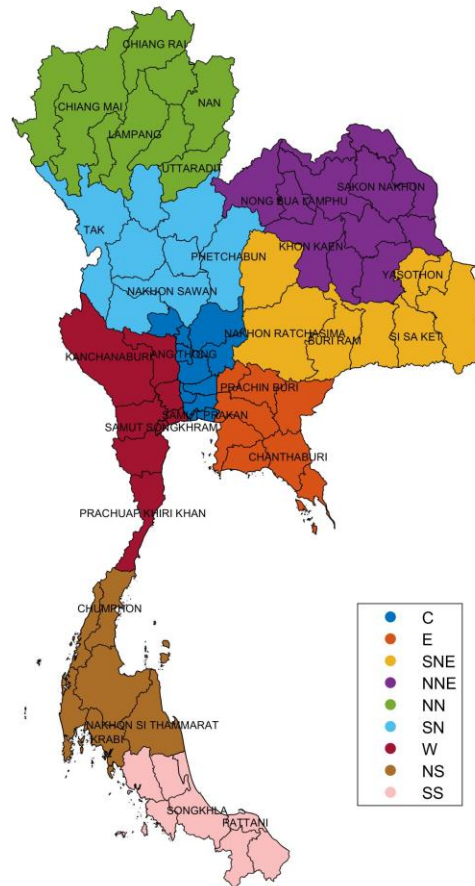
ข้าวผัด ใส่หมู ใส่ไข่ งานขนาดธรรมดา (จำหน่ายตามร้านอาหารทั่วไป)



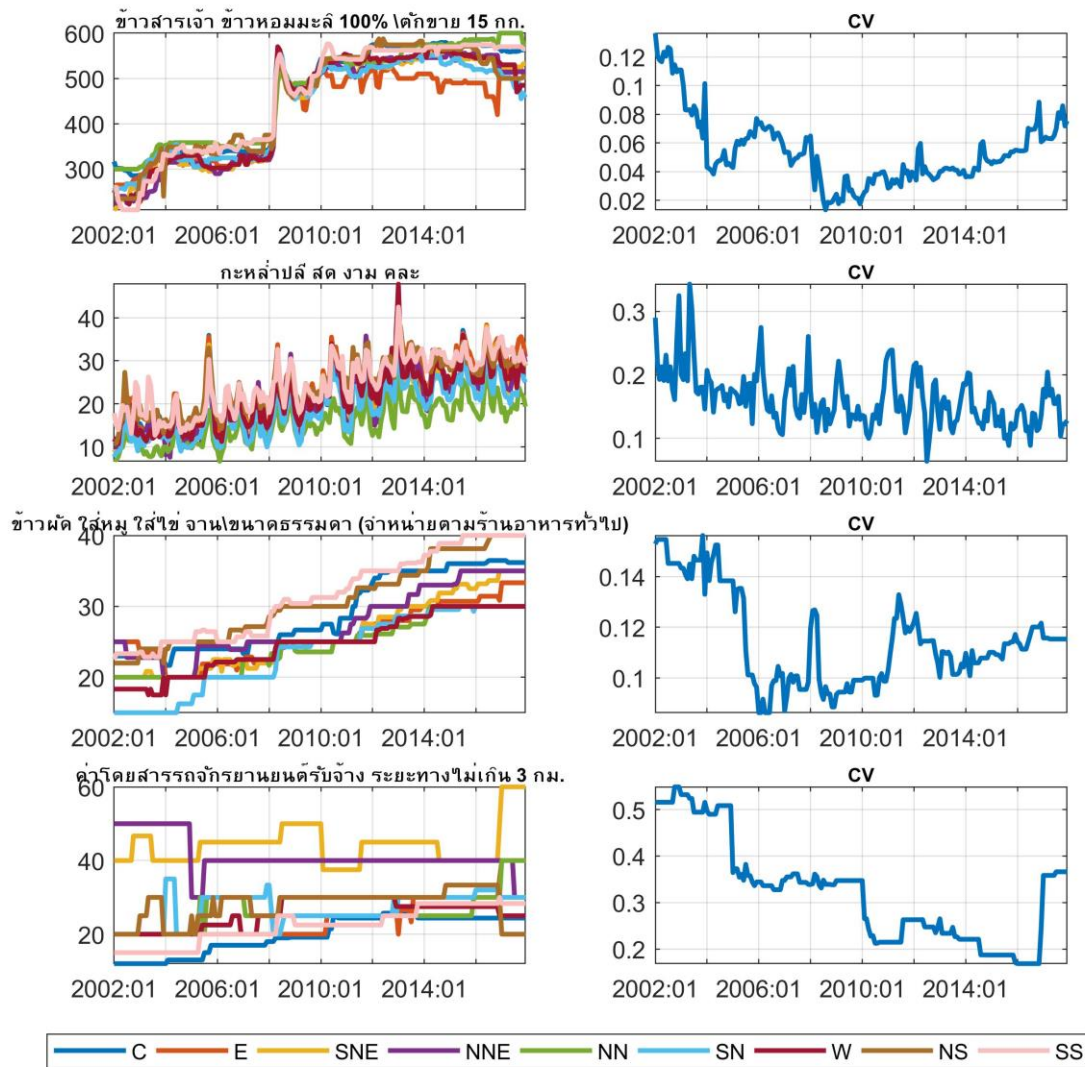
กับข้าวสำเร็จรูป แกงเขียวหวาน บรรจุถุงพลาสติก



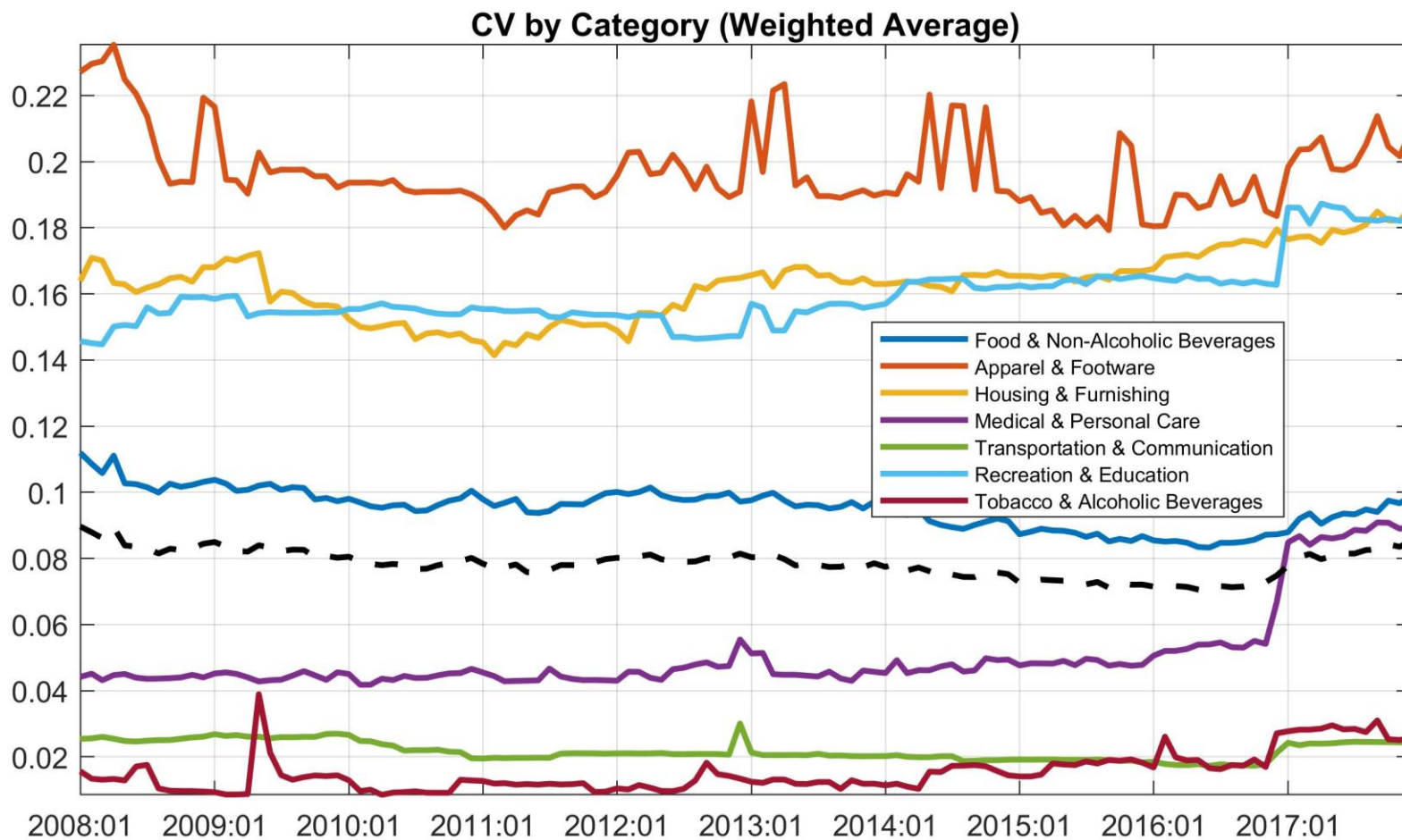
Regional Prices



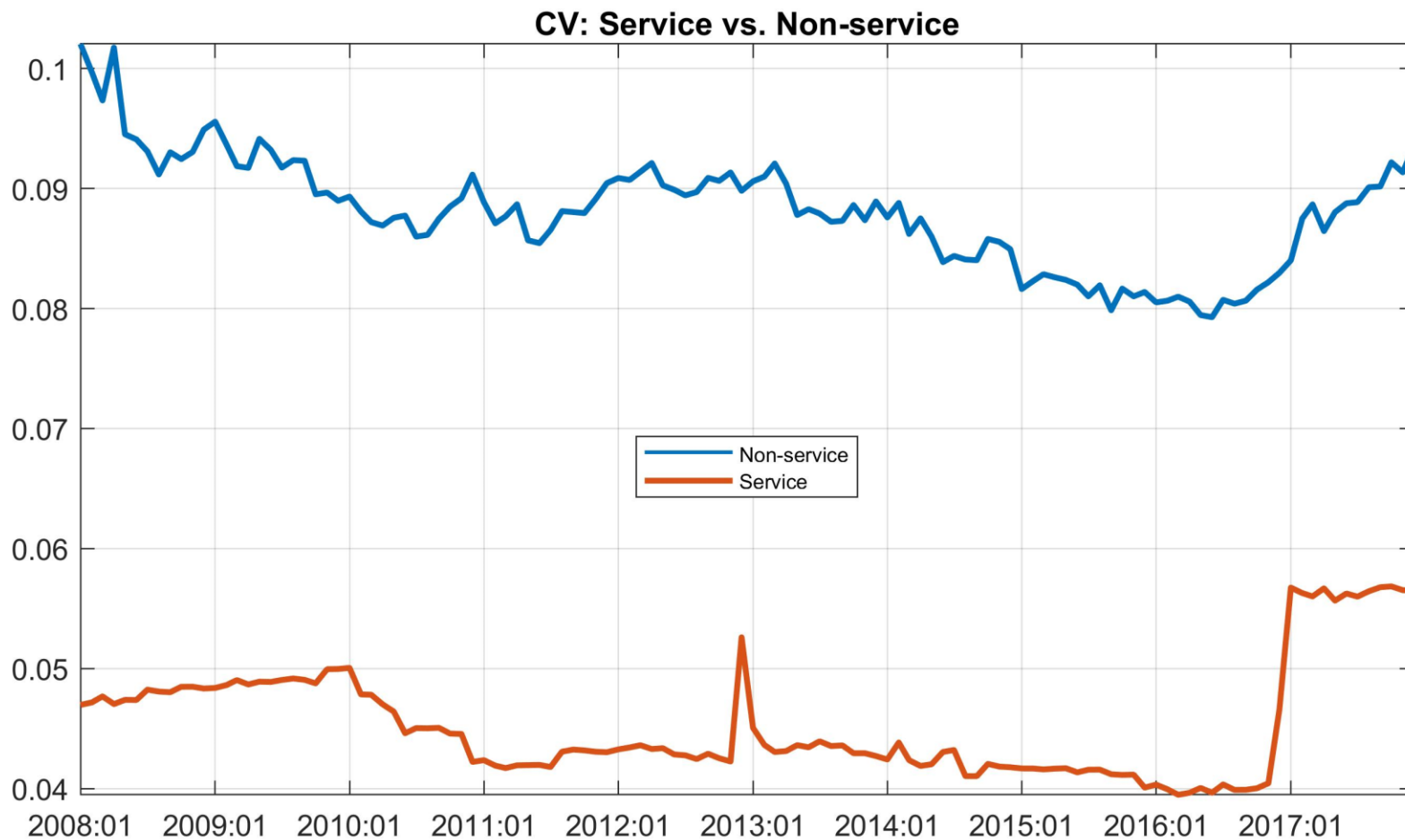
Coefficient of Variation



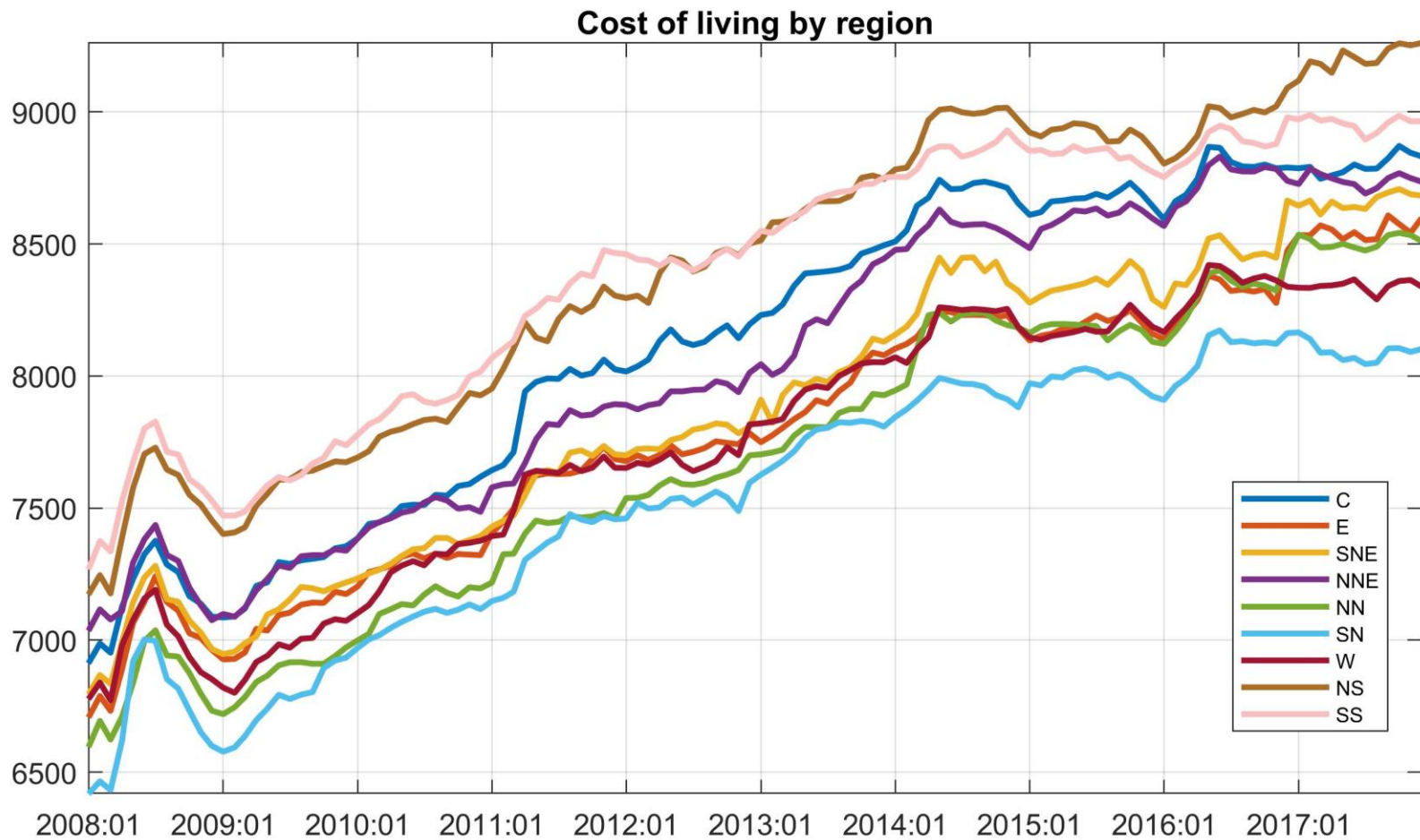
CV by Category



CV: Service vs. Non-service



Cost of living



Takeaways: 5 stylized facts

1. Prices change infrequently with a mean duration of approximately 7 months between price changes
2. Price decreases are common accounting for roughly 45 percent of all price changes
3. Price changes, both increases and decreases, are sizable compared to the prevailing inflation rate
4. The size of price changes covaries strongly with the rate of inflation, whereas the fraction of items changing prices does not
5. There is significant dispersion in price levels across geographical regions.