

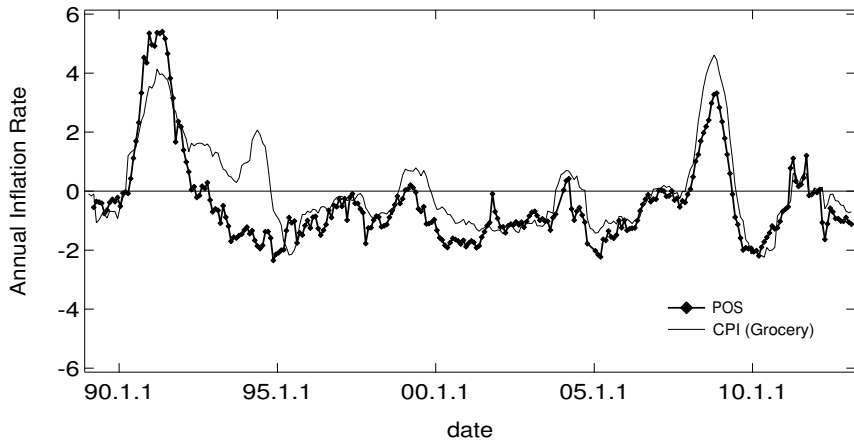
Micro Price Dynamics during Japan's Lost Decades

Kozo Ueda

Waseda University

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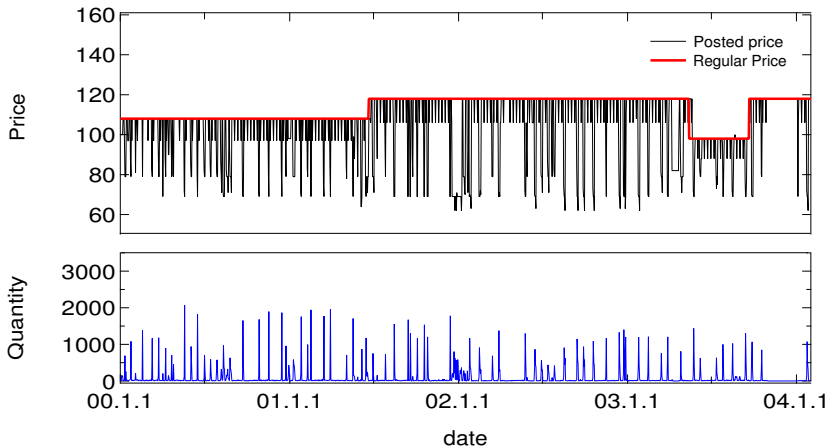
Lost Decades of Japan



POS data

- Scanner or Point of Sales (POS) data
 - ▶ Gathered by Nikkei Digital Media from various retail shops throughout Japan
 - ▶ From 1988 to 2013
 - ▶ Daily
 - ▶ Over 6 billion records

Price Changes of a Cup Noodle at a Store



Regular price is the mode price during the 3 months.

Frequency of Price Changes

Posted prices are extremely flexible.

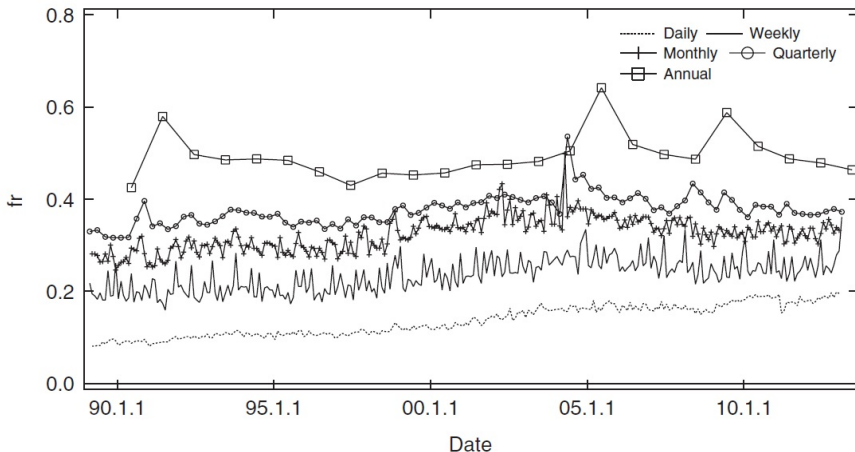
In the US, 40% for posted prices and 25% for regular prices (Klenow and Malin (2011))

		1988-1999		2000-2013	
		median	mean	median	mean
Posted price					
	All	237.0	306.1	415.3	492.4
	Processed food	275.4	341.6	465.7	544.2
	Domestic articles	106.6	118.0	217.7	233.4
Regular price					
	All	15.9	15.2	19.3	19.8
	Processed food	16.2	15.8	19.0	19.8
	Domestic articles	11.4	12.3	21.1	19.5

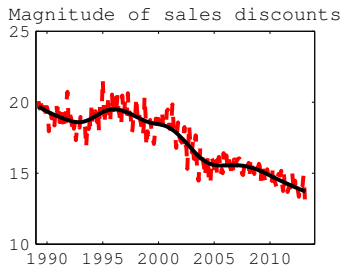
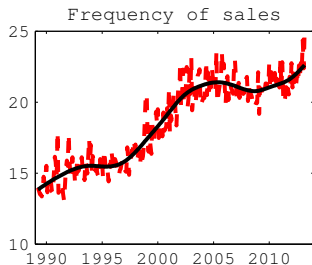
Note: The monthly frequency (%) is calculated as the daily frequency multiplied by 365/12.

Frequency of Price Measurement Matters

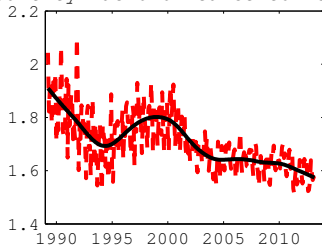
- For M, we take the prices on the 15th D of the M, so as to be consistent with the official CPI.
- Transformed to M frequencies, about 600% for D, 100% for W, 30% for M, 13% for Q, and 4% for Y.



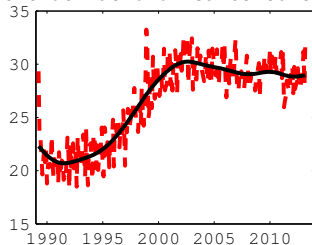
Temporary Sales are Increasingly Important



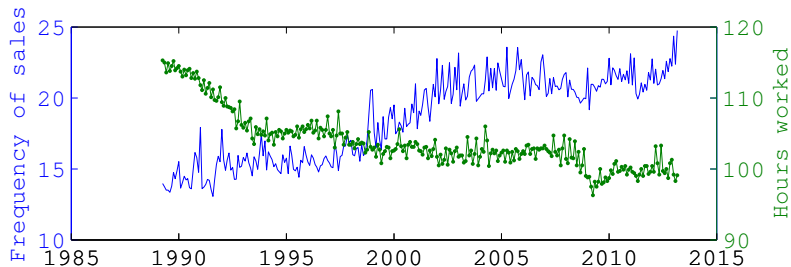
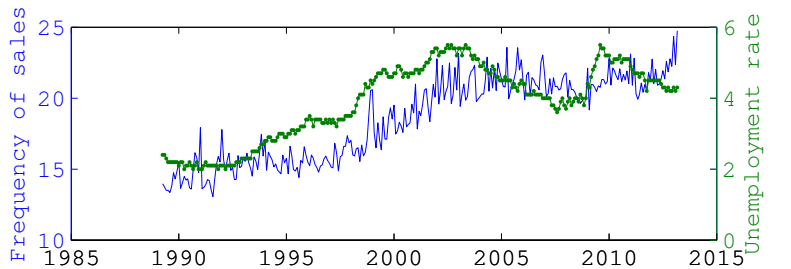
Quantity ratio of sales to regular sales



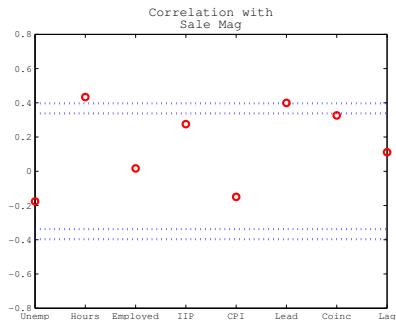
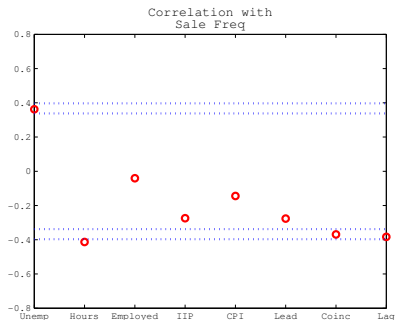
Revenue ratio of sales to total revenue



And Secular Decline in Hours Worked



- Also for a shorter time horizon, the business cycle, there is a correlation
 - a period of 1.5 to 8 years using the Baxter-King band pass filter
 - between the frequency of sales and the indicators of labor market.



Sign of Endogenous Bargain Hunting: Time Diary Survey

Table: Time Spent Shopping and Working (for workers, minutes per day)

	Men		Women	
	Shopping	Working	Shopping	Working
1986	6	493	27	371
1991	9	481	30	358
1996	11	469	30	345
2001	13	456	31	324
2006	14	470	31	335
2006	15	466	32	326

Source: Statistics Bureau, *Survey on Time Use and Leisure Activities*.

Other Interesting Facts

- Price elasticity seems to have increased (albeit casual observation).
- Product substitution increased (Ueda, Watanabe, and Watanabe (2015))
 - ▶ # of products increased.
 - ▶ Seems to be an opportunity to get back to a desirable price level.

References for Japan

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