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ABSTRACT

This paper uses survey data from Iceland on 884 firms to test for the theory of customer markets proposed by Phelps and Winter (1970) and Okun (1981). The results provide support for the customer market theory in that managers agree that customers are valuable to firms – they rank them second only to employees – and they use various means of augmenting and retaining their customer base, such as advertising. Surprisingly, however, price setting appears not to be an important ploy for attracting and retaining customers. In this we confirm the earlier results of Lye and Sibly (1994) using Australian data. Instead, advertising and direct contact with customers are listed as significantly more important.

Keywords: Customer markets, counter-cyclical markups, survey evidence.

JEL Classification : D43, E24

The pricing behaviour of firms operating in imperfectly competitive goods markets affects the equilibrium rate of unemployment when real wages are rigid. An increase of markups of price over marginal cost is equivalent to a fall in the real demand wage and raises the level of equilibrium unemployment. One prominent theory describing the price decisions by firms operating in imperfectly competitive goods markets is the customer market theory of Okun (1981) and Phelps and Winter (1970). In the customer markets framework firms have market power which stems from either imperfect information about prices, switching costs or habit formation. It follows that a firm can raise its price without instantly losing all of its customers because it takes time for the news of such price increases to spread between customers. However, customers will gradually abandon a firm that charges higher prices than its rivals. Hence there exists an intertemporal trade-off between current and future profits; higher prices raise current profits at the expense of future profits. In essence, price cuts constitute an investment in a larger market share and price setting should depend on variables such as real interest rates and the expected growth of purchases per consumer.

In this paper we explore the practical relevance of customer market theory, in particular the extent to which firms use prices as opposed to other marketing measures such as advertising and direct contact with customers.

I. Literature

The basic customer-market model has clear implications for the cyclical behaviour of markups. When current demand (per customer) is high, current profits matter more relative to future profits, which should make firms *raise* markups. This may not sound very plausible because such a price increase is tantamount to a fall in the real demand

wage and real wages are not counter-cyclical in the data (see Barsky and Solon, 1994). Partly in response to this criticism, recent work has enriched the customer-market framework in ways that helps it square up with the empirical evidence. Bils (1989) argues that when the state of high demand involves an inflow of new potential customers who are yet unattached to any one supplier, it is in the interest of firms to lower their markups in order to attract these new customers. In effect, the marginal benefit of cutting prices is raised during boom periods. Similarly, Ravn, Schmitt-Grohé and Uribe (2006) present a model where the firm faces two types of customers, those who have developed a taste for the firm's products and those who have not. The weight of the demand elasticity of the non-habitual customers rises during booms and markups decline. A recent paper by Bagwell (2004) arrives at similar results by assuming a positive correlation between current and future growth in demand. In a somewhat different setup, Ireland (1998) argues that high demand implies more purchases, which in turn fuels consumer search activity undermining the supplier's monopoly power. Finally, Choudhary and Orszag (2007) propose the idea of a fixed cost of servicing each customer. As demand rises, customers purchase more units while the cost of servicing each of them remains fixed. This allows firms to spread these costs over a larger number of units sold, the marginal cost of expanding the market share is now lower and markups become countercyclical.¹

¹ Another category of models identifies procyclical demand elasticity as the root cause of the observed behaviour of markups (see Beggs and Klemperer (1992), Warner and Barsky (1995) and Gali (1994)). Yet another category concentrates on the strategic behaviour of firms, such as Rotemberg and Saloner (1986) and Rotemberg and Woodford (1991). Haltiwanger and Harrington (1991) further develop this idea. A fourth category links imperfections in capital and product markets. For example Greenwald, Stiglitz and Weiss (1984) and Chevalier and Scharfstein (1996) propose different mechanisms through which cash-flow problems during recessions lead firms to limit their investments in market shares. A fifth category uses the input-output relations between firms to explain the behaviour of markups. Basu (1995) is one example. The sixth and final category of models is based on the idea of the 'pied-piper,' commonly known as the loss-leader pricing. In these models firms find it more efficient to advertise and commit to a low price when demand is high in order to attract customer who may also buy higher-priced goods so as to avoid search costs (see Lal and Matutes (1994) and Chevalier, Kashyap and Rossi (2000)).

In contrast to the emphasis on inter-temporal trade-offs in the original contribution of Phelps and Winter (1970) and in later contributions just described, Akerlof (2007) uses customer markets to explain price rigidities. He argues that prices seem to be especially sticky in customer markets and attributes this to price norms, that customers have an idea about what constitutes a fair price which makes firms only change prices very infrequently. If he is right, the emphasis on explaining whether desired markups are counter-cyclical or pro-cyclical in the previous literature is somewhat misplaced. Earlier, Okun (1981) had argued that firms would be reluctant to raise price above the level expected by customers for fear of appearing unreliable, which would lower profits in the future. A similar point is also argued in a recent paper by Nakamura and Steinsson (2005) who show that firms operating in customer markets may keep prices unchanged as a part of an implicit contract with habit-forming customers. Lye and Sibly (1994) provide supportive evidence by applying the customer market model to the study of the Australian meat and vegetable retail markets where they find evidence for price rigidity. McDonald (1990) extends the theory of the determination of retail prices in a customer market to a shop selling many types of goods and demonstrates how the theory can explain the relative stability of retail prices. Sibly (2007) shows how the introduction of imperfect customer information reduces the variability in retail prices when customers repeat purchase. With stable prices, firms may use other measures to attract and retain customers, such as advertising or an emphasis on good service and quality products.

In this paper we use survey evidence to test the fundamental implication of customer market theory which is that firms view their customer base – market share – as an asset and then explore the methods that they apply to augment and protect this

asset. In particular, we are interested in knowing how important price setting is in this regard.

Using surveys to test economic theories is of course not without its difficulties. Non-economists may not understand the intended meaning of different questions which make slight changes in the wording of the questions have disproportionate responses. Also, in many cases managers go by their own intuition or gut feeling, which they may or may not be capable of explaining to others. Partly, in response to these anticipated difficulties, we did not ask the managers explicitly whether they choose to keep prices fixed over the business cycle or whether they choose to change them in a systematic way. Instead, we asked specific questions about the nature of the customer-supplier relationship and how they would change prices in response to changes in the macroeconomic environment that will give us an indirect answer.

II. Survey method

We use data from Iceland partly because we are knowledgeable about that particular country but also because most of its internal markets are imperfectly competitive due to its small size. The survey is the first of its kind in the country and differs from previous international work on pricing by its focus on customer market theory.² Our

² Blinder (1991) and Blinder et al. (1998) initiated the use of surveys in their study of price setting in the United States and found considerable price stickiness due to multiple reasons such as coordination failures, implicit and explicit contracts and pro-cyclical demand elasticity. Bhaskar et al. (1993) conducted a survey of British managers in which they were asked about the actions they would take in booms and recessions. The responses suggested that quantity adjustments were by far more important than price adjustments over the business cycle. A recent paper by Fabiani et al. (2006) shows the results of a survey of pricing behaviour in the euro area. The results are somewhat similar across countries. They find that markup pricing is the main price-setting strategy in the euro area and implicit and explicit contracts between firms and their customers an important factor behind the price stickiness. While firms are likely to raise prices when the cost of production goes up, they choose to keep prices unchanged when demand increases in order not to upset their customers. Similar studies for other countries include Apel et al. (2005) for Sweden, Amirault et al. (2004) for Canada, Small and Yates (1999) and Hall et al. (1997, 2000) for the UK, Hoeberichts and Stockman (2005) for Holland, Kwapil et al. (2005) for Austria, Louprias and Richart (2004) for France, Lünemann and Mathä (2005) for Luxemburg and Stahl (2005) for Germany.

sample consists of 884 firms, each with 4 employees or more. It is randomly selected from the National register of firms in Iceland.³ All firms in the sample are separate firms, not branches of larger companies. They are located in all parts of the country, some in the consumer market and others selling their services to other businesses. All sectors are represented; manufacturing, services and retail/whole-sales. In each firm, either the CEO or the CFO responded.⁴ We will refer to the respondent as the manager henceforth. Of the 884 firms, 234 refused to answer and 146 could not be reached. This yields 504 respondents, which is a 57% response rate.

The survey includes nine questions. All but one of the questions were closed and response categories were read to respondents. A manager was first asked whether his firm was privately or publicly owned. Of the 504 responders, 136 were public and were dropped from the sample. The questions that followed were on the number of competitors in the market; the most and second most important reason for customer loyalty; and an assessment of when the firm is in the greatest danger of losing some of its customers. An open-ended question followed on what the respondents thought was the most effective way of acquiring new customers. Next, they were asked about the most valuable asset of the firm and the second-most valuable asset. Finally, there were three questions on whether the manager would raise markups, lower markups or leave them unchanged in response to changes in the changing economic environment.

³ Iceland has a population of 300,000 people, the vast majority of the working-age population belonging to the service sector. Its labour market is well integrated geographically and the population mass is urban and concentrated in the capital city Reykjavik and vicinity. Perhaps partly due to the flexibility of the labour market, the country ranked ninth in the world in terms of (PPP-adjusted) GDP per capita in 2002 and second in terms of a quality-of-life index (*The Economist, World in Figures*).

⁴ The survey was conducted over the phone between January 26 and February 20 2006. Calls were made during weekdays by trained interviewers and they always asked for the CEO. If he or she was not in, the interviewer asked for the CFO. If neither was in, a call was made later same day or the following day. Questions were programmed in CATI (computer-assisted telephone interview) software called NIPO. After a call was made and a respondent accepted the interview each question appeared on a computer screen in front of the interviewer and answers were immediately punched in at the keyboard. All answers were saved in a database and after the last interview transformed to SPSS, which was used to analyse the results.

Respondents were asked about three hypothetical changes; an increase in current demand for the products⁵ leaving future demand unchanged; an expected increase in future demand while current demand stays the same, and; an interest rates increase.⁶

III. Results

It should not come as a surprise that managers consider customers to be an asset. However, it is more interesting to see how they rank them alongside other assets such as the value of trained employees. We first report responses to the question about the most valuable and the second-most valuable asset of the firm. Managers were given a list of possibilities. The results are shown in Table 1 below. While employees received the highest score, customers came in a clear second. Of responders, 21.5% rated customers as their firm's most valuable asset while 35% rated them as the second-most valuable asset. This clearly provides support for customer-market theory. Only the stock of firm's employees received higher ratings, 55.1% said they constituted the most valuable asset and 30.9% the second-most valuable asset. Just over 17% responded that it was their trademark or image. Very few respondents mentioned other assets. An aggregate measure for the most valuable asset (given a weight of 2) and the second most valuable asset (with weight of 1) shows the same ranking, i.e. employees (47.0%), customers (26.1%) and trademark or image (18.6%).

⁵ By "products" we mean both products and services.

⁶ In addition to the nine survey questions, information was obtained on background variables for each firm, such as yearly turnover, number of employees, location, markets (consumer or business to business) and industry (manufacturing, services, or retail/whole-sales).

Table 1. The most valuable and the second-most valuable asset for firms

	Most valuable (1) %	Second most valuable (2) %	Combined %
Workers	55.1	30.9	47.0
Customers	21.6	35.0	26.1
Trademark	17.3	21.3	18.6
Location	2.6	6.7	3.9
Assets in accounts*	1.7	5.0	2.8
Other assets	1.7	1.2	1.5
Total	100	100	100

* Such as bank deposits, machinery and housing.

We next report responses to questions that were aimed at testing whether managers treated price setting as an intertemporal investment decision. In Table 2 responses to the three questions on the effect of hypothetical changes in the economic environment are shown.

Table 2. Effect of higher demand and interest rates

	Demand increases Temporarily (%)	Current demand unchanged, but expected future demand increased (%)	Interest rates go up (%)
Unchanged	84.1	86.7	57.9
Higher prices	11.9	8.8	41.7
Lower prices	4.0	4.5	0.3
Total	100	100	100

Most managers would leave prices unchanged if demand rose temporarily or was expected to rise in the future (around 85% of respondents). Only about 10% would raise markups and less than 5% would lower them. These results confirm the existence of substantial price stickiness as found in the macroeconomic literature (see Fabiani et al. (2006) cited above). While keeping prices unchanged in the face of increased demand is consistent with both the idea of counter-cyclical desired markups as well as the hypothesis that firms choose to keep prices unchanged because of price norms or an implicit contract with habit-forming customers, keeping prices unchanged when demand is expected to rise in the future is only consistent with the latter. Clearly, an expected demand increase should make the marginal benefit of cutting prices rise which should make desired markups fall.

The existence of price norms within the customer market framework was proposed by Akerlof (2007) and the idea that firms keep prices unchanged as a part of an implicit contract with habit-forming customers was described by Nakamura and Steinsson (2005). These authors argue that keeping prices stable is the best way of attracting customers. The responses to the second question provide support for the existence of price norms and/or implicit contracts about stable prices. Keeping prices unchanged in the face of an anticipated future increase of demand implies that markups are not cut when a future increase is expected.⁷ This suggests that prices are kept unchanged in the face of expected demand increases as well as current ones.⁸

⁷ Unless firms also increase production – hence experience rising marginal costs – in anticipation of higher sales

⁸ In a recent paper, Chevalier, Kashyap and Rossi (2003) use a data set taken from a large supermarket chain in Chicago and find that retail prices fall during periods of peak product demand, in contrast to higher overall demand for all goods. Moreover, they find that the falling prices are due to falling markups. We did not find this effect in the responses. In the case of current demand increases 94% of whole sale/retail firms would leave markups unchanged, while 79% of manufacturing firms would do the same, and 86% of service industry firms.

Of respondents, 41.7% would raise prices in response to higher interest rates. These responses to an increase of interest rates can be explained by the inter-temporal dimension customer market theory: When interest rates rise, we expect firm to cut back investment in new customers, hence raise markups and prices. However, price norms may also yield this implication. When interest rates rise firms can justify price increases because of increased costs; customers understand the need for price increases when interest rates rise.

The next question was meant to inquire further about the nature of the supplier-customer relationship. Managers were asked about the most important reason and the second-most important reason for customers to stay with the firm, i.e. reasons for customer loyalty. Respondents were given five answer choices in a random order. The results for the most and second-most important reason were then aggregated, were the most important reason got the weight of 2 and second most important reason got the weight of 1. Table 3 shows the results.

Table 3. The most and second-most important reason for customer loyalty

	Most important reason (1) %	Second most important reason (2) %	(1) and (2) combined %
Superior service	40.7	24.9	35.4
Superior products	38.7	19.2	32.2
Lower prices	8.3	27.6	14.7
Habit formation	6.9	26.7	13.5
No apparent alternative supplier	5.4	1.5	4.1
Total	100	100	100

Two reasons for customer loyalty received far more support than the others. These were "superior service" (35.4%) and "superior products" (32.2%). In third and fourth place were "lower prices" (14.7%) and "habit formation" (13.5%). Both obtained even greater support as the second most important reason (over a quarter for each).⁹

Clearly, it is difficult for managers to claim that superior products and services are not the reason for customer loyalty. The 26.7% of respondents who claim that habit formation is the second-most important reason for customer loyalty provide support for customer market theory.

The next question asked respondents when customers were most likely to leave their firm. This is a test of the hypotheses of Bilal (1989), Ireland (1998), Bagwell (2004), Ravn, Schmitt-Grohé and Uribe (2006), namely that customers are more likely to leave when demand is high. While almost half of responders said customers were more likely to leave during a recession, more than 10% chose booms and about 40% said this was independently of the economic situation.¹⁰

Table 4. When is a firm most likely to lose a customer?

	%
In a recession	48.9
Independent of the state of the economy	39.9
In a boom	11.2
Total	100

⁹ Firms with more competitors are more likely to mention better service and better products or service as the most important reason for customer loyalty. Those who are in the service industry are more likely to say better service (55%) as the most important reason for customer loyalty, more so than those who are in manufacturing (34%) or whole sale/retail (27%). On the other hand, those in wholesale/retail are more likely to name better product or service (53%).

¹⁰ Firms having none or 1-2 office workers are far more likely to say that their customers are likely to leave them during recession (73% and 52% respectively) than those who have 6-10 office workers (23%) or more than 10 office workers (30%). On the other hand, those who have more than 10 office workers are more likely to say that their customers are likely to leave them in boom years (30%), than those who have none (4%) or 1-2 office workers (8%).

Not surprisingly, most managers fear losing customers in recessions. However, it may come as a surprise to some that 11.2% of respondents claim that their firm is most likely to lose customers during economic expansions. Finally, we inquire about how firms go about attracting new customers; that is investing in a larger market share.

Table 5. The most effective way to attract new customers

	%		%		%
Good service	17.6	Good quality	6.2	Marketing	2.9
Advertising/junk mail	17.1	Trust/honesty	3.8	Customer satisfaction	1.8
Reputation	16.8	Good performance	3.8	Salesmanship	1.5
Visits to customers	14.4	Good prices	2.9		
One-to-one contact	8.2	Other reasons	2.9		
Total					100

In this open-ended question on what would be the best way of acquiring new customers almost 18% mentioned good service, over 17% mentioned advertisements or mail, and almost 17% word of mouth. These were the top three reasons for acquiring new customers. The fourth reason was "visits and information meetings" (14.4%), then "personal interaction" (8.2%) and finally "good product" (6.2%). Other reasons were mentioned with less frequency. Note that price-cutting is only mentioned as the most effective way of attracting new customers by 2.6% of respondents. Apart from good service and quality, managers mention advertising more frequently,¹¹ as well as visits and one-to-one contacts with customers. Table 5 confirms the overall impression of price rigidity found in Table 2 above. There we

¹¹ Chevalier, Kashyap and Rossi (2003) also emphasise the substantial role advertising plays in attracting customers in periods of high seasonal demand.

found that prices are kept unchanged when demand goes up or is expected to increase. Now we find that price changes are not considered to be an effective way of attracting customers. We can conclude that customer market theory is less suited to explaining price changes and better suited to explaining price inertia.

IV. Concluding thoughts

The survey results presented in this paper provide support for the customer market theory of Phelps and Winter (1970). Managers agree that customers are valuable to firms, they rank them second to employees, and they use various means of augmenting their customer base, such as advertising. They also mention habit formation as a source of customer loyalty.

However, price setting appears not to be an important tool when it comes to attracting and retaining customers. In this we confirm the earlier results of Lye and Sibly (1994), who used Australian data. Instead, advertising and direct contact with customers are listed as the more important. In contrast to the conventional view of customer-markets, our results suggest that such markets display rigid prices and infrequent price changes involving intertemporal choices. While rigid prices do imply counter-cyclical markups when marginal costs are rising in output, the fact that prices are not changed in anticipation of increased demand implies that firms do not deliberately adjust markups and price inertia is the rule. This in turn provides direct support for Okun (1981) and also for Akerlof (2007), who argues that prices seem to be especially sticky in customer markets due to price norms. Similarly, our survey equally supports Nakamura and Steinsson (2005) who argue that firms keep prices unchanged as a part of an implicit contract with habit-forming customers and Sibly

(2007) who shows how the introduction of imperfect customer information reduces variability in retail prices when customers engage in repeat purchases.

References

- Akerlof, G. A. (2007), "The Missing Motivation in Macroeconomics," *American Economic Review*, 97 (1), 5-36.
- Amirault, D., C. Kwan, and G. Wilkinson (2006), "Survey of Price-Setting Behaviour of Canadian Companies," Working Paper 2006-35, Bank of Canada.
- Apel, M., R. Friberg, and K. Hallsten (2005), "Microfoundations of Macroeconomic Price Adjustment: Survey Evidence from Swedish Firms," *Journal of Money, Credit, and Banking*, 37 (2), 313-338.
- Bagwell, K. (2004), "Countercyclical Pricing in Customer Markets," *Economica*, 71, 519-542.
- Barsky, R., J.A. Parker and G. Solon (1994), "Measuring the Cyclicity of Real Wages: How Important is Composition Bias?" *Quarterly Journal of Economics*, CIX (1), 1-25.
- Basu, S. (1995), "Intermediate Goods and Business Cycle: Implication for Productivity and Welfare," *American Economic Review*, 85 (3), 512-531.
- Beggs, A. and P.D. Klemperer (1992), "Multiperiod Competition with Switching Costs," *Econometrica*, 60 (3), 651-666.
- Bhaskar, V., S. Machin, and G.C. Reid (1993), "Price and Quantity Adjustment over the Business Cycle: Evidence from Survey Data," *Oxford Economic Papers*, 45, 257-268.
- Bils, M. (1987), "The Cyclical Behavior of Marginal Cost and Price," *American Economic Review*, 77, 838-855.
- Bils, M. (1991), "Pricing in a Customer Market," *The Quarterly Journal of Economics*, 104 (4), 699-718.
- Blinder, A. (1991), "Why are Prices Sticky? Preliminary Results from an Interview Study," NBER Working Paper No. 3646.
- Blinder, A. S., E. Canetti, D. E. Lebow and J.B. Rudd (1998), *Asking about Prices: a New Approach to Understanding Price Stickiness*, Russell Sage Foundation. New York.
- Chevalier, J. A., A.K. Kashyap, and P.E. Rossi (2003), "Why Don't Prices Rise During Periods of Peak Demand? Evidence from Scanner Data," *American Economic Review*, 93 (1), 15-37.
- Chevalier, J. A. and Scharfstein, D. S. (1996), "Capital Market Imperfections and Countercyclical Markups: Theory and Evidence," *American Economic Review*, 86 (4), 703-725.
- Choudhary A. and J M. Orszag (2007), "Costly Customer Relations and Pricing," forthcoming *Oxford Economic Papers*, 59(4), 641-61.
- Fabiani, S., M. Druant, I. Hernando, C. Kwapil, B. Landau, C. Loupias, F. Martins, T. Matha, R. Sabbatini, H. Stahl, and C.J. Stokman (2006) "The Pricing Behaviour of Firms in the Euro Area: New Survey Evidence," European Central Bank, working paper no. 535.
- Gali, J. (1994), "Monopolistic Competition, Business Cycles and the Competition of Aggregate Demand," *Journal of Economic Theory*, 63 (1), 73-96.

Greenwald, B., J.E. Stiglitz, and A. Weiss (1984), "Informational Imperfections in the Capital Market Macroeconomic Fluctuations," *American Economic Review*, 71 (2), 194-199.

Hall, S., M. Walsh, and A. Yates (1997), "How do UK Companies Set Prices?" *Working Paper No 67*, Bank of England.

Hall, S., M. Walsh, and A. Yates (2000), "Are UK Companies' Prices Sticky?" *Oxford Economic Papers*, 52, 425-46.

Haltiwanger, J. and J.E. Harrington Jr. (1991), "The Impact of Cyclical Demand Movements on Collusive Behavior," *The Rand Journal of Economics*, 22 (1), 89-106.

Ireland, P. (1998), "Customer Flows, Countercyclical Markups, and the Output Effects of Technology Shocks," *Journal of Macroeconomics*, 20 (4), 649-665.

Hoerberichts, M. and A. Stokman (2005), "Pricing Behaviour of Dutch Companies: Main Results from a Survey," *De Nederlandsche Bank*, mimeo.

Kwapil, C., J. Baumgartner, and J. Scharler (2005), "The Price-Setting Behavior of Austrian firms: Some Survey Evidence," *ECB Working Paper No 464*.

Lal, R. and C. Matutes (1994), "Retail Pricing and Advertising Strategies," *Journal of Business*, 67 (3), 345-370.

Loupas, C. and R. Ricart (2004), "Price setting in France: New Evidence From Survey Data," *ECB Working Paper No 423 and Note d'Etude et de Recherché No 120 Banque de France*.

Lünnemann, P. and T. Mathä (2005), "New Survey Evidence on the Pricing Behaviour of Luxemburg Firms," *Banque Centrale du Luxemburg*, mimeo.

Lye, J.N. and H. Sibly (1994), "Testing for Pricing Asymmetries in Customer Markets," *Australian Economic Papers*, 33 (63), 239-252.

Mankiw, G. (1985), "Small Menu-Costs and Large Business Cycles: A Macroeconomic Model of Monopoly," *Quarterly Journal of Economics*, 100(2), 529-539.

Martins, F. (2005), "The Price-Setting Behaviour of Portuguese Firms: Evidence From Survey Data," *Banco de Portugal*, mimeo.

McDonald, Ian M. (1990), "The Setting of Retail Prices in a Customer Market," *The Economic Record*, 66 (4), 322-328.

Nakamura, E., and J. Steinsson (2005), "Price-setting in Forward Looking Customer Markets," unpublished.

Okun, A. M. (1981), *Prices and Quantities: A Macroeconomic Analysis*, Basil. Blackwell Oxford.

Phelps, E. S. and S.G. Winter Jr. (1970), "Optimal Price Policy Under Atomistic Competition," in E. S Phelps et al., *Microeconomic Foundations of Employment and Inflation Theory*. New York, Norton.

Ravn, M., S. Schmitt-Grohe, and M. Uribe (2006), "Deep Habits," *Review of Economic Studies*, 73 (January). 195-218.

Rotemberg, J. J. and G. Saloner (1986), "A Supergame-Theoretic Model of Price Wars during Booms," *American Economic Review* (76), 390-407.

Rotemberg, J. J. and M. Woodford (1995), "Dynamic General Equilibrium Models with Competitive Product Markets" in Cooley, T. F, *Frontiers of Business Cycle Research*, Princeton University Press, New Jersey.

Rotemberg, J. J. and M. Woodford (1991), "Markups and the Business Cycle," *NBER Macroeconomics Annual* 6: 63-128.

Shea, J. (1993), "Do Supply Curves Slope Up?," *Quarterly Journal of Economics*, 108 (1), 1-32.

Sibly, Hugh (2007), "Price Dynamics in Repeat-Purchase Markets," *The Economic Record*, 71 (2), 179 – 190.

Small, I. and T. Yates (1999), "What Makes Prices Sticky? Some Survey Evidence for the United Kingdom," *Bank of England Quarterly Bulletin*, 262-270.

Stahl, H. (2005), "Price-Setting in German Manufacturing: New Evidence from a Survey," Deutsche Bundesbank, mimeo.

Taylor, J. (1979), "Staggered Price Setting in Maco Model," *American Economic Review*, 69(2), 108-113.

Warner, E.J. and R.B. Barsky (1995), "The Timing and Magnitude of Retail Store Markdowns: Evidence from Weekends and Holidays," *Quarterly Journal of Economics*, 110 (2), 321-352.