Consumer Behavior and Competition in Retailing

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Drawing on a small but growing literature, this note argues that consumer behavior may be as important as firm behavior for the level of competition in consumer industries such as retailing. We use data on 1.948 retail stores in India and contribute to the literature in three ways. First, we find that the number of non-workers in the household, a proxy for time cost of shopping, has a large effect on competition. Moving from the city with the least to the most number of non-workers increases competition by 84% of its mean level. Second, as suggested in the literature, we find that moving from the richest to the poorest city increases competition by 50% of its mean level. However, much of this effect is due to more non-workers in the poorer cities rather than any independent effect of income. Third, we report on a number of interesting and somewhat surprising findings on the level of competition in India relative to other countries, how it varies across small vs. large stores and metropolitan vs. non-metropolitan cities.

"Active consumers who are prepared to check and shop around to ensure they get a good deal are a key driving force in helping to create truly competitive markets." (Stephen Byers, Secretary of State, UK; Department of Trade and Industry, 2000)

The simple idea that consumer behavior matters for competition in consumer industries such as retailing, electricity distribution and personal finance is at the heart of a small but growing literature. This literature calls for greater emphasis in competition policies on consumer behavior as opposed to the number of firms or firm-behavior. For example, Waterson (2003) notes that

"… traditional competition policy will not suffice to render the industry competitive and that, in such cases, quite different policy measure may well be more effective in enhancing competition. In a nutshell, consumer behavior and policy towards consumers matter significantly for industry performance."

How can research help?

A good example of how research can help is a recent study by Giulietti et al. (2005) on the deregulation of the natural gas supply market in the U.K. This study finds that the incumbent (monopolist) continued to enjoy significant market power even after complete deregulation (free entry) and that the cost of deregulation has so far outweighed the benefit. According to the study, the main reason for this failure is the *perception* among consumers that the cost of searching and switching to a new supplier would be more than the associated benefit. To complete the story, the perceived cost was much higher than the true cost. All in all, the study recommends correcting consumer perceptions through, for example, an information subsidy. This is a key ingredient for the success of the deregulation effort.

The broader point here is that for a more effective competition policy we need to understand how consumers behave in the market and why so. This note takes one step in this direction using data on 1,948 retail stores in 41 large cities of India and collected by the World Bank's Enterprise Surveys in 2005. Based on Amin (2008a), the note argues that the number of non-workers per household (henceforth, non-workers) can have a large effect on the level of competition in retailing. The motivation is that household shopping time opportunity cost (henceforth, time cost) is an important determinant of how intensively consumers search (for best prices and deals). More non-workers in the household imply lower time cost leading to more intensive search by consumers and therefore more competition in retailing. The finding is especially important for India given that the retail sector is the second largest sector in the country (Amin, 2008b) and non-workers are fast declining in part due to the ongoing economic boom.[1]

We also look at some of the popular beliefs about competition in Indian retailing and the income-competition relationship. We find that many of these are not supported by the data. For example, as existing studies suggest, we do find a negative relationship between income and competition. However, contrary to popular opinion, what seems to drive this relationship is lower time cost for the poor relative to the rich (poorer households have more non-workers) and not that poor agents value a dollar of savings (from more intensive search) more than the rich. Policy implications of these findings are discussed.

Where is competition higher?

The Enterprise survey asked retailers if competition from other retailers is not at all important, slightly important, fairly important or important for the prices of the store's main products. Without much loss of generality, we define competition as significant if a store reported competition as fairly important or important.[2] Figure 1 shows some important findings on the variable. First, 38.2% of the stores in the full sample face significant competition. The comparable figure in Enterprise Surveys for registered manufacturing firms in India equals 82% and 71% for retailers in 27 Eastern Europe and Central Asian countries. In short, competition in Indian retailing seems low even though the country boasts of one of the highest density of retail stores in the world. Second, the metropolitan cities of Bangalore, Chennai, Delhi, Hyderabad, Kolkatta and Mumbai have traditionally been the retailing hubs of the country and also the main beneficiaries of the ongoing retailing boom. Yet, competition in these cities is significantly lower than in the remaining cities.[3] Third, contrary to popular belief, the level of competition amongst traditional stores (small stores selling grocery items) is significantly less than amongst large stores (large stores selling consumer durable and other items and often part of a larger shopping complex). One reason for this could be that smaller stores are better able to segment the market by providing personalized retailing services to their customers. Fourth, competition varies significantly across cities with a low of 5.7% stores in Kozhikode and a high of 100% in Madurai reporting competition as fairly important or important.

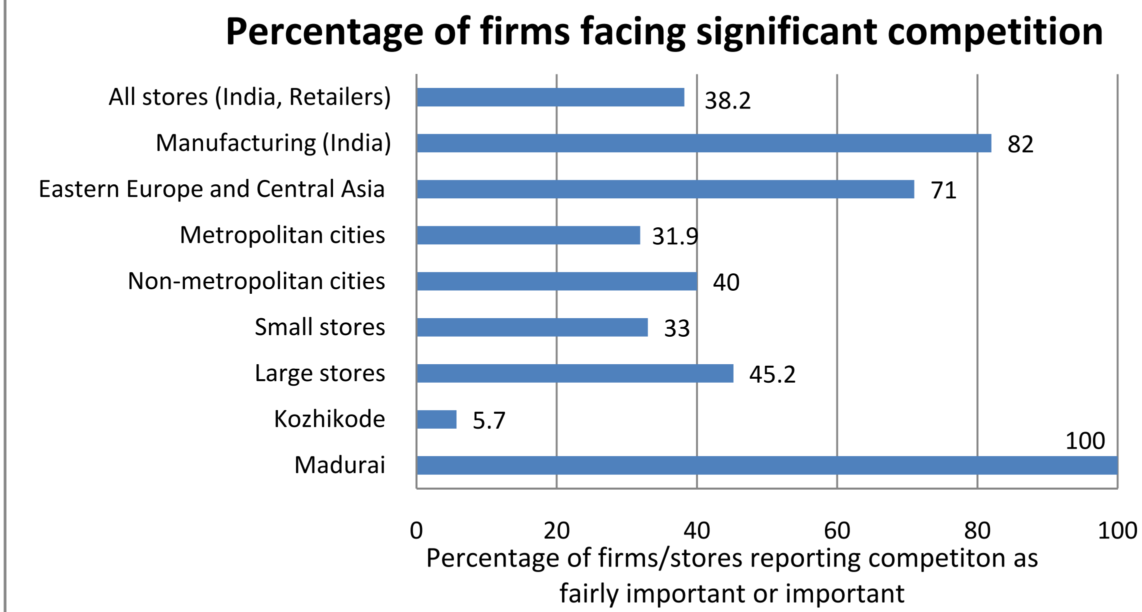

Figure 1

Source: Enterprise Surveys and Business Environment and Enterprise Performance Survey (BEEPS, 2005). Metropolitan cities include Bangalore, Chennai, Hyderabad, Kolkatta, Mumbai and New Delhi. Small stores include tranditional stroes selling grocery itmes. Large stores are large-sized stores selling various consumer items and usually part of a larger shopping complex.

Does household shopping time opportunity cost matter for competition?

This question has not been addressed in the formal literature. We provide a first glimpse of the answer using the number of adult non-workers per household (averaged at the city level) as a proxy for the time-cost of shopping. We follow the Census definition of adults, non-workers and households.[4] For the cities in our sample, the number of non-workers per household varies between 2 (city of Noida) and 3.9 (city of Patna) with a mean value of 2.85.

As mentioned above, we suspect that the time cost of shopping is lower for households that have more non-workers and therefore such households are likely to search more intensively. Thus, the prediction is greater competition in cities with more non-workers. Figure 2 confirms the prediction. It implies that a move from the city with the least number of non-workers (Noida) to the most (Patna) increases the proportion of stores facing significant competition by 32.1 percentage points. This is a large effect given that only 38.2% of the stores in the full sample face significant competition. These findings are especially important for a country such as India where non-workers are fast declining, in part due to the ongoing economic boom. For example, between 1991 and 2001 and averaged over the 14 major states of the country, non-workers per household declined by 7.2% (from 2.84 to 2.64). The decline was as sharp as 18.6% in the state of Haryana, over 12% in Punjab and Kerala and around 10% in West Bengal, Karnataka and Orissa. If this trend continues as expected, competition in retailing could see a rapid decline in the near future.

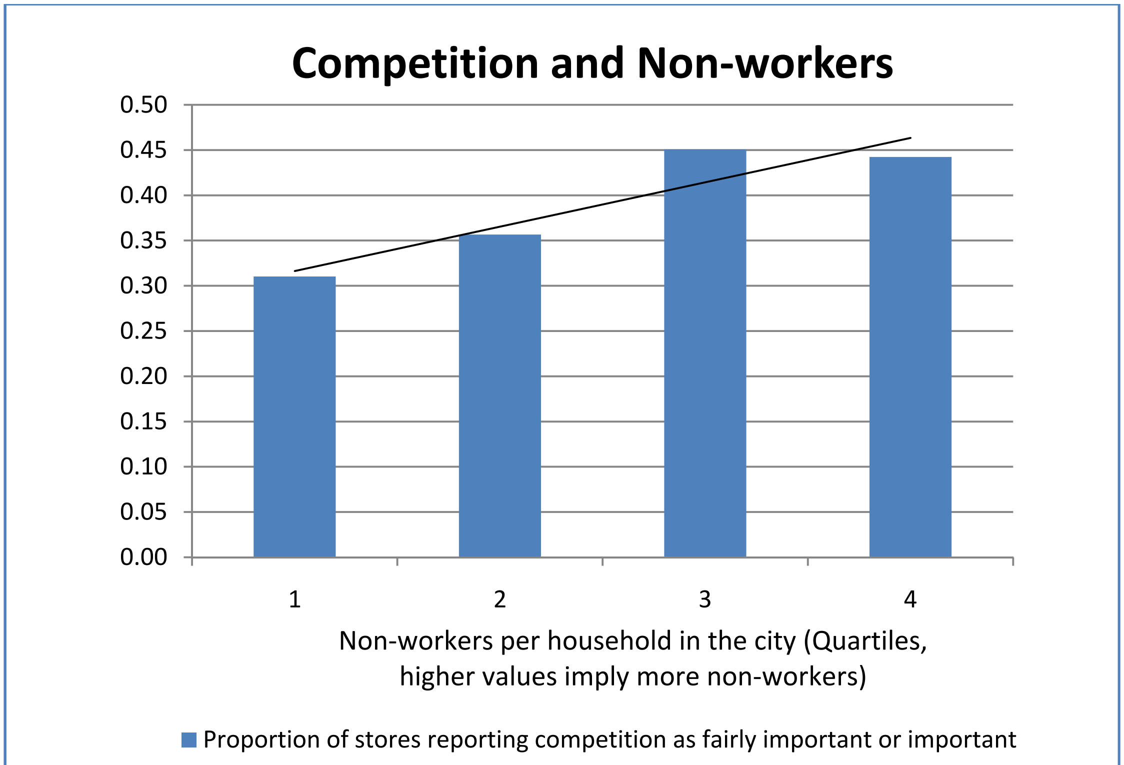

Figure 2

Source: Enterprise Surveys and Census of India (1991).
The horizontal axis shows the number of non-workers per household in the city grouped by their quartile values. A higher quartile indicates more non-workers.

Do more non-workers simply reflect less development?

One could argue that non-workers may be proxying for some aspect of underdevelopment. While this argument seems unlikely since less development is normally associated with less competitive markets, we provide a counterfactual example to address any lingering concerns. We compare non-workers and the number of children per household (averaged at the city level) in how they affect competition. The key point is that both more non-workers and children are reasonably good proxy measures of less development and hence they should have similar effects on competition if less development is the true driving force. In contrast, more children raise the cost of time spent shopping lowering search intensity and therefore the level of competition. The predicted effect of non-workers on competition is just the opposite. Figure 3 shows the relationship between children and competition is clearly negative. It is somewhat weak but becomes much stronger once we control for non-workers, the main covariate of children. In short, children and non-workers have independent and opposite effects on competition. Hence, it is unlikely that they are merely a proxy for less development.

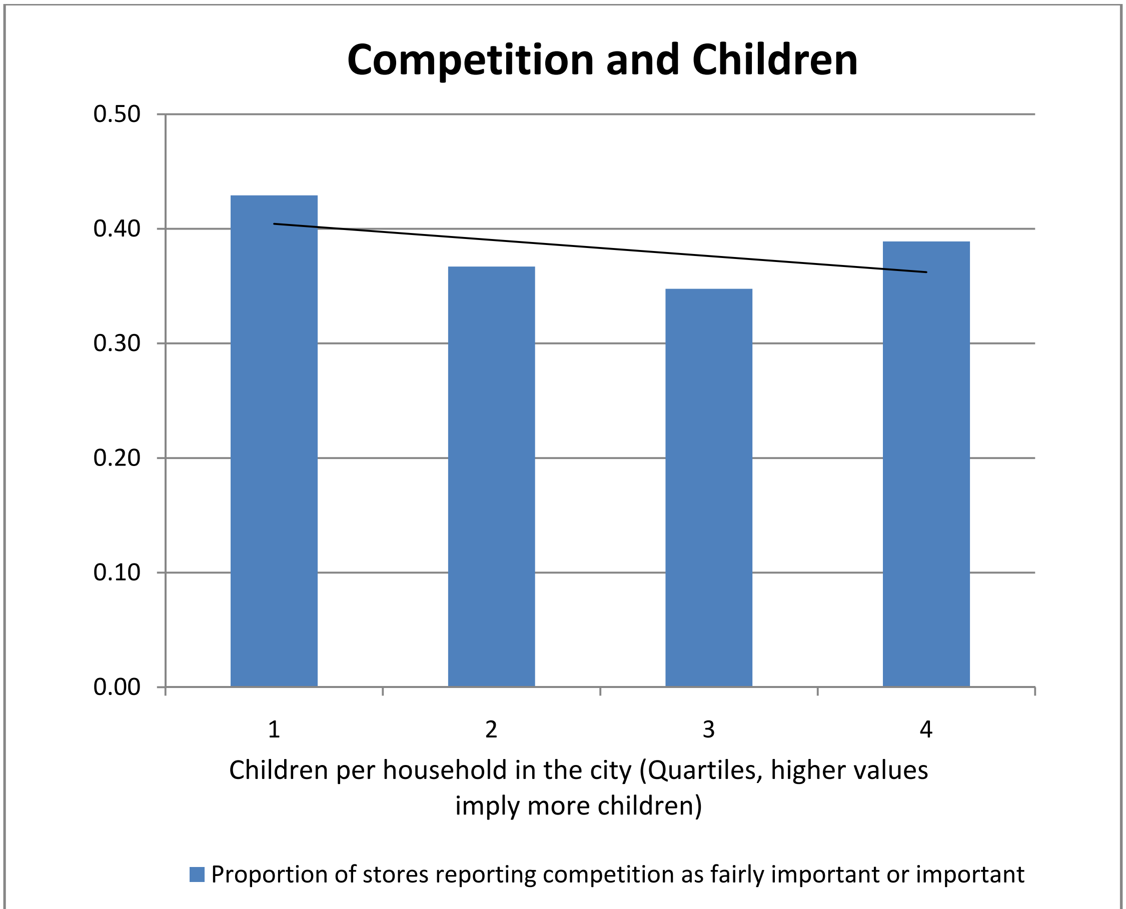

Figure 3

Source: Enterprise Surveys and Census of India (1991).
The horizontal axis shows the number of children per household in the city grouped by their quartile values. A higher quartile indicates more children.

What drives the income-competition relationship?
It comes as no surprise that cities that have more non-workers also have lower per capita consumption expenditure, the closest (proxy) measure of city level per capita income that is available.[5] Anecdotal evidence suggests that the marginal utility of a dollar saved (due to a more intensive search for best prices) is higher for the poor relative to the rich and therefore the poor search more intensively. Hence, competition should be higher in the relatively poorer cities. Given that non-workers and income levels are correlated, it is possible that the proposed income-competition relationship is in fact driven by the greater presence of non-workers in the poorer cities. That is, the reason why poor agents search more intensively driving up competition is not that they value a dollar of savings more than the rich but because they have more non-workers in the house and therefore can afford to spend more time searching for best prices. Distinguishing between these two cases is important for optimal remedial measures.

Our analysis shows that the income-competition relationship is somewhat weak but it does become strong once we control for differences in the number of children, quality of infrastructure (power outages) and the severity of business regulations across the sampled cities. With these differences taken into account, moving from the richest (Chandigarh) to the poorest city (Patna) increases the proportion of stores that report competition as fairly important or important by a large 19.2 percentage points.[6] However, this increase is only 7.9 percentage points and statistically weak if we control for non-workers too. In short, what seems to drive poorer households to shop more intensively is that they have more non-workers to shop and not so much the higher utility from a dollar saved.

What can policy makers learn from these results?

The broad policy implication of the findings above is that competition policies that are currently focused exclusively on firm-behavior should pay more attention to consumer behavior and consumer attributes that shape consumer behavior. Some attributes such as non-workers may not be directly amenable to competition policies. However, even in such cases indirect policy measures can help alleviate part of the problem. For example, cities with fewer non-workers or where non-workers are decreasing at a rapid rate can be targeted with better e-commerce facilities, longer operating hours for retail stores, lower entry barriers and better dissemination of information on product prices.

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[1] The retail sector in India provides 10% of all formal jobs and contributes 14% to the national GDP. These numbers are for formal (registered) retailing. Available estimates indicate that over 95% of retailing in the country occurs in the informal sector.

[2] The competition variable is based on the experience of retailers defined along a subjective scale. The use of such experienced based subjective measures is becoming increasingly popular. See, for example, Fan et al. (2009).

[3] The difference in the level of competition between metropolitan cities and the rest is significant at less than 5% level.

[4] Adults are all individuals above 7 years of age; a non-worker is someone who has voluntarily opted out of the labor market (neither working nor searching for a job); and a household is a set of individuals living under a single roof and sharing a common kitchen.

[5] Data source for per capita expenditure of households averaged at the city level is National Sample Survey Organization (NSSO, 50th Round). Data used is for the urban part of the district. Districts are bigger than cities.

[6] This increase in competition is significant at less than 5% level.