Discussion of “Size-dependent VAT and firm growth”

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Summary: Motivation

- In Japan, firms with sales at or below ¥10 million are exempt from paying value-added taxes (VAT)
  - Firms can avoid VAT by reporting sales at or below ¥10 million.
  - Actually, there is a bunching of firms at the ¥10 million threshold.
- What types of firms would bunch at the ¥10 million VAT threshold to avoid VAT?
  - Low-productivity firms (that would maximize profits just above the ¥10 million threshold of sales without the VAT system).
  - Among low-productivity firms, particularly those with high compliance costs (costs to file VAT returns)
- This paper examines how firm productivity and compliance costs affect the extent of bunching at the ¥10 million VAT threshold.

Summary: Methodology

- First, estimate the degree of bunching for *each prefecture* using firm-level data from 2011-2014.
  - Use firms with sales less than or equal to ¥150 million.
- Regression analysis using the prefecture-level data:

$$Bunching\ est_j = \alpha + \beta lnmed\_sal_j + \gamma GFPT_j + \lambda x_j + \epsilon_j$$

  - $Bunching\ est_j$: bunching estimate in prefecture j
  - $lnmed\_sal_j$: median sales of firms in prefecture j (proxy for productivity)
  - $GFPT_j$: average consulting fee payments to tax accountants per firm in prefecture j (proxy for compliance costs)
- Another specification:

$$Bunching\ est_j = \alpha + \sum_{i=1}^{4} \beta_i\ sal\_q_i + \sum_{i=1}^{4} \gamma_i sal\_q_i \times GFPT_j + \lambda x_j + \epsilon_j$$

  - sal_q_i: Indicator for the median sales in prefecture j being between the $(i-1)$th and ith quartiles among 47 prefectures

Summary: Results

- Find the negative coefficient on productivity ($lnmed\_sal_j$), suggesting that low-productivity firms are more likely to bunch at the threshold.
- Find the positive and larger coefficients on $(Sal\_q_i \times GFPT_j)$ for lower quartiles of sales, suggesting that lower-productivity firms are more likely to bunch in response to a decrease in compliance costs.
- Firms in prefectures with larger bunching estimates (less knowledgeable about filing VAT returns) are less likely to bunch at the threshold when they have transactions with firms in prefectures with smaller bunching estimates (more knowledgeable).
  - Less knowledgeable firms learn from knowledgeable firms through transactions.

Overall Comments

- This research is the first to study the bunching behavior at the VAT exemption threshold in Japan.
  - Onji (2009) studies the ¥500 million threshold for the simplified VAT filing system introduced in 1990.
- I like the authors' idea so much! This research is important both for the literature and policy debates in Japan.
- However, I have several concerns about their approach using the prefecture-level data.
  - All firm characteristics are aggregated up to the prefecture level.
  - I would recommend working with firm-level data and analyzing individual firms' bunching behaviors.

Comment (1): Endogeneity Concerns

- The median sales ($lnmed\_sal_j$) is used as a proxy for productivity in prefecture j.
- The average consulting fee payments to tax accountants per firm ($GFPT_j$) are used as a proxy for compliance costs.
  - Large firms would have many transactions, raise large sales, and thus pay large amounts of consulting fees.
- Both variables are affected by the distribution of sales of firms in each prefecture and thus endogenous to firms' bunching decisions (or bunching estimates).

Comment (2): Proxy for Productivity

- In the regression analysis, the authors argue that the negative coefficient on the median sales ($lnmed\_sal_j$) implies that low-productivity firms are more likely to bunch.
  - Does the coefficient really capture the effect of productivity on bunching estimates?
- In prefectures with lower median sales, there would be a larger number of small firms. These firms are more likely to be affected by the threshold, which may lead to larger bunching estimates.
  - The coefficient might capture this correlation between bunching estimates and median sales across prefectures.

Comment (3): Measure of Firms' Knowledge

- The authors regard firms in prefectures with large bunching estimates as less knowledgeable firms about filing VAT returns.
- But that is not necessarily the case because the extent of bunching is determined by many factors including productivity and compliance costs, as the authors noted.
  - Why can large bunching estimates be simply attributed to the lack of knowledge about the VAT system?
  - Why and how could firms' knowledge about the VAT system vary systematically across prefectures?

Suggestions

- I would suggest the authors work more on analyzing graphically the distribution of firms around the threshold as Onji (2009) and Chetty et al. (2011) did.
  - Compare the actual and counterfactual distributions around the threshold.
  - See whether many firms bunch at the threshold while there are few firms right above the threshold.

Suggestions (continued)

- I would recommend using other measures of productivity and compliance costs.
  - Possibly, estimate the TFP for each firm as a firm-level productivity measure.
  - Possibly, use the number of trading partners for each firm as a proxy for compliance costs.
  - Possibly, find tax reforms that affect compliance costs to exploit exogenous variations in compliance costs.
- Then, it would be interesting to see how the bunching estimates and the distributions of sales around the threshold differ between productive and non-productive firms, and between firms with high and low compliance costs.