

Discussion of Fan, Liu, Qian and Wen: The dynamic effects of computerized VAT invoices on tax revenues in China

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Introduction

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- ▶ Questions of tax compliance and the effects of technological innovation on tax systems are increasingly important in the development literature.
- ▶ This paper provides rigorous evidence about a particularly large-scale VAT computerization initiative undertaken in China.

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Summary

- ▶ The authors analyze the effects of computerizing VAT invoices on tax revenues and firm behavior, using a panel of large-scale manufacturing firms and an identification strategy that exploits variation across sectors in the pre-reform intensity of audits, and pre-post variation with respect to the year of reform.
- ▶ They find evidence of an increase in VAT revenues in the short term that seems to fade in the medium-term.
- ▶ This pattern is consistent with a model of firm behavior given constant returns to scale and perfect competition, differentiating between firms' response to the tax reform in the short and long term.

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Empirical strategy

- ▶ The empirical strategy in its simplest form utilizes the interaction of variation at the sector level in the VAT share (considered to be a proxy for audit intensity) and pre-post variation relative to the reform in a flexible dif-in-dif.
 - ▶ Given the potential for endogeneity of the former measure, the authors also utilize an instrumentation strategy instrumenting the VAT share in China with the VAT share in the U.S.
- ▶ Though the authors report the two-stage least squares results, OLS and 2SLS are not significantly different.
- ▶ Could it be preferable to use the more transparent specification?

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Correlation between VAT share and audit intensity

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Interpreting the primary results

- ▶ If we examine the estimated coefficients for VAT payments, there is an increase in 2002-04 that diminishes in magnitude in 2005-07.
 - ▶ **However**, the coefficient is around 20-30% smaller (depending on the specification), and the differences are not statistically significant.
- ▶ Is this robust evidence that the short-term and long-term (or medium-term) effects are different?
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Conceptual framework

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Exit and entry

- ▶ The balanced panel includes only 13% of all firms in the panel.
- ▶ These firms may be exiting or entering from the survey (perhaps due to movement above/below the scale threshold), rather than the sector.
- ▶ However, it would be helpful to learn more about sectoral entry and exit during this period, and its implications for the model.
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Policy implications

- ▶ Learning about evasion techniques may not necessarily be an alternative explanation for these results, but is it really the case that the system eliminated evasion other than at the top and bottom of the production chain?
 - ▶ Analyzing firms at the top and bottom may be interesting, but retailers are presumably not well-represented in the survey.
- ▶ Finally, if we conclude that VAT revenues do not increase in the long-term, could the reform still be considered cost-effective (reduction in recurring enforcement costs)?

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