Discussion of "Misallocation or Mismeasurement," by M. Bils, P. Klenow, and C. Ruane

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Setting up the issue

- Deviations of output per inputs across productive units are large, especially in poor and developing countries
- Interpreted as misallocation these deviations can account for aggregate productivity differences across countries
- Question: Do these deviations reflect misallocation or mismeasurement?

Setting up the issue

- Simple framework: homogenous good produced by heterogeneous establishments

$$y_i = A_i h_i^{\gamma}, \qquad \gamma \in (0,1)$$

- Competitive input and output markets, idiosyncratic output wedge τ_i

$$(1-\tau_i)\gamma A_i h^{\gamma-1} = w; \quad \frac{y_i}{h_i} = \frac{w}{\gamma}\frac{1}{(1-\tau_i)}$$

- Absent distortions, output per inputs equalized across establishments, aggregate output and TFP are maximized
- Deviations of output per inputs may reflect misallocation...but it may also be mis-specification due to γ differences or mismeasurement in outputs and/or inputs

What BKR do

- Develop a method for assessing the presence of measurement error in cross-sectional data
- The method exploits information in panel data to assess extent of mismeasurement, provides corrected measure of reallocation gains
- Main idea is that revenue changes is less sensitive to input changes when average products overstated by measurement error
- Apply method to panel plant-level manufacturing data of India and the United States

What BKR find

- In India, mismeasurement reduces the cross-sectional gains from reallocation by 20%, no systematic variation over time
- In the United States, mismeasurement affects level and trend of allocative efficiency
- Corrected average reallocation gains in India relative to the United States about 40%
- Similar to HK-09 cross-sectional gains in India relative to the United States

Comments

- Well written paper on an important topic
- Method intuitive, useful, and widely applicable when panel data is available
- Not a lot to comment about the execution other than wish they had followed more closely HK-09 in presentation and analysis
- Comments divided into:
  (1) Interpretation paper's findings
  (2) Other perspectives into relevance of misallocation

The paper's findings

- How much of the extent of measurement error in the paper driven by data sample? Does correction change the overall picture of misallocation that emerges?
- At least two potential reads of results:
  - Massive measurement error in cross-sectional data, little scope for reallocation gains
  - While there is measurement error in cross-sectional data, reallocation gains substantial, India relative to the United States around 40%
- Important to understand what is driving the results

The paper's findings

- A more systematic comparison with HK-09 and HK-14
- Comparison not straightforward: CES elasticity different, gross output vs. value added, samples, trimming, etc.
  - HK-09&14: India more distorted, reallocation gains larger in India, elasticity of distortions higher in India, close to 0 in US
  - BKR: Uncorrected data, US more distorted than India, reallocation gains larger in US, elasticity of distortions higher in US
- Corrected data closer to HK but still some differences, especially elasticity of distortions
- Sample data may be important (sample reduction with panel, average plant size in India, prevalent issue in literature)
- My take: No general conclusion about the extent of measurement error, data dependent

Other perspectives

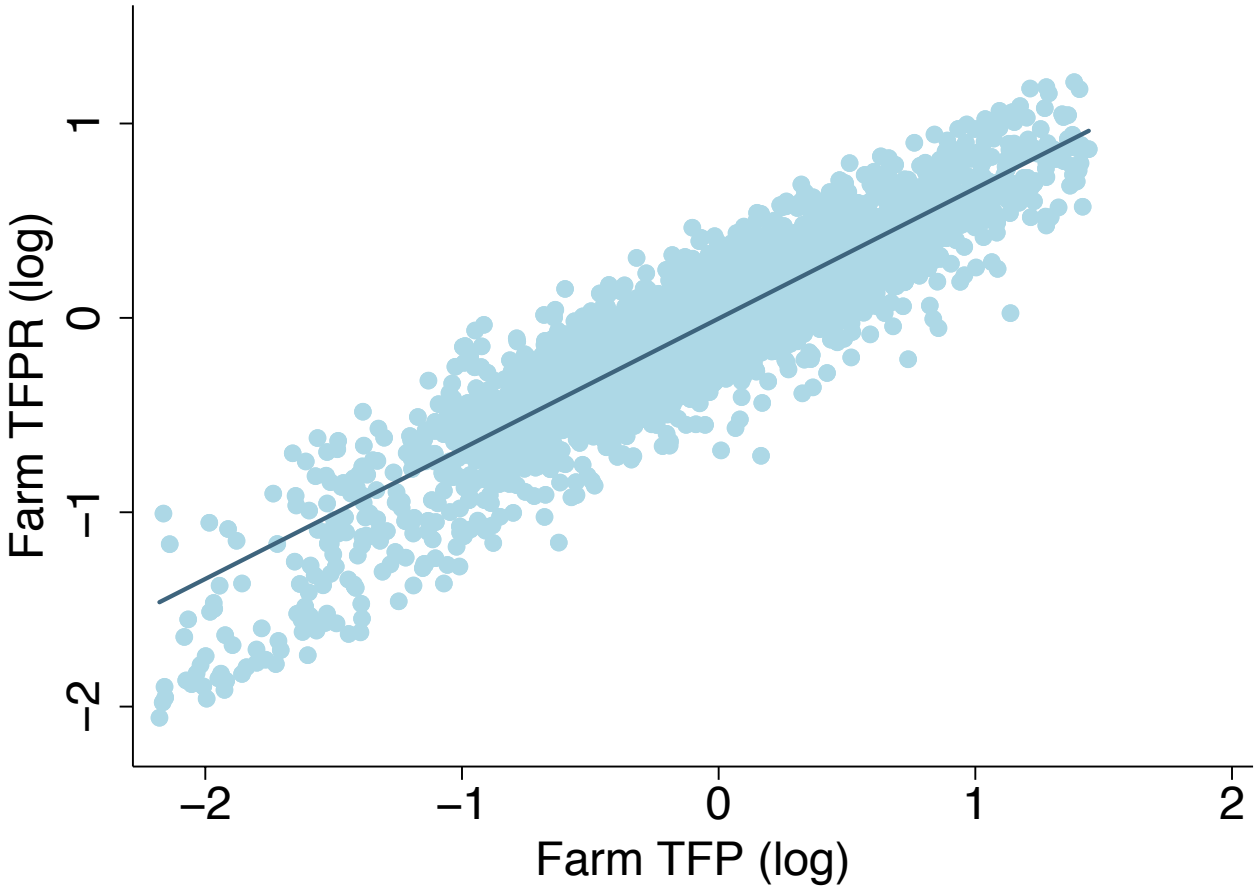
- No clear cut answer to question posed in the paper, evidence suggests mismeasurement and misallocation play a role
- A clear message: Panel data allows to reduce extent of measurement error in analysis of misallocation but ultimately does not change big picture
- Another example of this message in a practical context: Land allocation in Chinese agriculture

Land allocation in Chinese agriculture

- Chinese households are allocated use-rights of land (part of the Hukou system) in a fairly egalitarian basis
- Implicit "use-it-or-loose-it" rules imply that farm operational scales mostly determined by allocation of use rights
- What do we expect? To the extent that HHs differ in their ability to work the land, more productive HHs should feature high revenue products relative to less productive HHs
- Data: 10-year panel of Chinese farming households with detailed information on quantity of outputs and inputs into agricultural production

Measured wedges in Chinese agriculture

Farm-specific distortions and productivity



Source: Adamopoulos et al. (2020). SD $\log TFPR_i = 0.48$, correlation$(\log TFP_i, \log TFPR_i) = 0.91$

Role of mismeasurement

	Fixed Effect Estimates		Cross-section
	Household farm	+ Village	average
Farm TFP:			
STD(log)	0.35	0.64	0.71
p90/p10	2.18	4.35	5.53
Farm TFPR:			
STD(log)	0.48	0.81	0.90
p90/p10	3.14	7.17	9.48
CORR (logTFP, logTFPR)	0.91	0.88	0.88
BKR $\hat{\lambda}$	1.00	0.95	0.91

Source: Adamopoulos et al. (2020).

Other perspectives

- Main takeaway: Less mismeasurement in Chinese agriculture, effect in systematic component of distortions not overwhelming
- Finding consistent with India in this paper and other contexts in the literature
- Useful recipe for practitioners: If panel data available, use it to correct for measurement error, otherwise follow HK lead and establish a benchmark for comparison (another country, another group or region)

Other perspectives

- Extent of static misallocation may not be as important, view of misallocation "narrow"
- Many examples already in the literature
- Misallocation of talent in Hsieh, Hurst, Jones, Klenow (2019): convergence in occupation distribution across gender/race in the US contributed to 20-40% growth between 1960-2010
- Stephen Ayerst's work emphasizing dynamic effects of misallocation

Other perspectives

- US over time: Change in static misallocation small compared to misallocation in R&D investment
  - Ayerst (2020) "Innovator heterogeneity, R&D misallocation, and the productivity growth slowdown"
  - Increase in markups/profits away from high quality innovators towards high volume innovators accounts for two thirds of productivity slowdown
- Across countries: Measures of misallocation that penalize productive producers have an overwhelming effect on adoption of frontier technologies
  - Ayerst (2019) "Distorted technology adoption"
  - Accounts for 50% of differences in cross-country technology adoption lags in Comin-Hobijn (2010)
  - Doubles productivity loss from static misallocation
- Bottom line: many potential dimensions of misallocation, dynamic effects can be important

Conclusion

- Very useful/intuitive method to quantify the extent of mismeasurement in cross-sectional data using panel data
- These methods are badly needed in development as prevalent effect of policies and institutions in developing countries are implicit distortions