

Import Uses and Domestic Value Added in Chinese Exports: What can we learn from Chinese micro data?

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Motivation

- International input-output tables (e.g., GTAP, WIOD, EORA, and OECD)
- Problems:
China's trade structure not properly represented
- Solution:
develop China's DPN (or DP) framework
→ pioneered by Chen et al. (2001)

Motivation

- Key is to split-up the import use from intermediate deliveries
- Proportionality assumptions and firm survey
- Problems:
 - Over-simplified, Feenstra & Jensen (2012)
 - biased estimates, Bernard et al (2007).
- Solution:
 - explore existing firm level data
 - better survey
 - to narrow the scope of assumptions

A sketch of the DPN framework

	Intermediate use			Final use		
	D	P	N	DFD	EXP	TOT
D	$\mathbf{Z}^{DD}$	$\mathbf{Z}^{DP}$	$\mathbf{Z}^{DN}$	$\mathbf{f}^D$	0	$\mathbf{x}^D$
P	0	0	0	0	$\mathbf{e}^P$	$\mathbf{x}^P$
N	$\mathbf{Z}^{ND}$	$\mathbf{Z}^{NP}$	$\mathbf{Z}^{NN}$	$\mathbf{f}^N$	$\mathbf{e}^N$	$\mathbf{x}^N$
IMP	$\mathbf{M}^D$	$\mathbf{M}^P$	$\mathbf{M}^N$	$\mathbf{f}^M$	0	$\mathbf{x}^M$
VA	$(\mathbf{v}^D)'$	$(\mathbf{v}^P)'$	$(\mathbf{v}^N)'$			
TOT	$(\mathbf{x}^D)'$	$(\mathbf{x}^P)'$	$(\mathbf{x}^N)'$			

Source: Lau et al. (2007), Chen et al. (2012)

China micro data: available, but usable? (1/2)

Custom Trade Data

- firm ID
- HS-8 Product (6000-9000)
- export value
- import value (inputs, K, C)
- customs regime (normal/proc trade)
- ownership

Production Data

- firm ID
- CIC industry (500)
- gross output
- value added
- **total** input use
- ownership (equity share)

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graph TD; A[Custom Trade Data] --> C((Calculate domestic content)); B[Production Data] --> C;
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Calculate
domestic
content

China micro data: available, but usable? (2/2)

More problems:

- Imports resold to other firms
- Imported inputs not used in current year (inventory)
- Firm produces in multiple sectors

But, never mind, make assumption and use it!

Upward, Richard, Zheng Wang and Jinghai Zheng, 2012, “Weighing China’s export basket: The domestic content and technology intensity of Chinese exports,” *Journal of Comparative Economics*

Only a subset of exporting firm

Table 2. Summary statistics of the 2007 enterprise and trade data

	Firm numbers	exp	imp	output	sales
ASIP	336,768	7.34	n.a.	40.50	40.00
exporting ASIP	79,103	7.34	n.a.	21.90	21.30
trade data	236,505	9.27	7.27	n.a.	n.a.
L&M (matched)	65,545	2.58	1.23	7.54	7.34
L&M ASIP exp>0	50,277	2.31	1.05	5.95	5.81
L&M imp>0	37,536	2.17	1.23	5.48	5.38

Note: exp, imp output and sales value in trillion yuan

https://www.yunbaogao.cn/report/index/report?reportId=5_5894

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terogeneity calls for more fort in survey design

Imported intermediates and exports breakdown by firm type, 2007

Imported intermediates, %			exp by customs regimes, %			
exp	for normal exp		proc exp		normal exp	
L&M firms	Total	L&M firms	Total	L&M firms	Total	L&M firms
41.0	37.8	14.9	24.1	15.4	75.9	84.6
61.9	78.7	52.4	81.8	85.9	18.2	14.1
46.7	73.7	59.2	59.7	65.5	40.3	34.5
47.2	25.6	6.4	9.8	14.9	90.2	85.1
38.0	104.4	64.3	26.6	34.2	73.4	65.8
57.6	62.7	40.7	50.6	70.4	49.4	29.6
proc exp	normal BEC input imp / normal exp		proc exp/total exp		normal exp/total exp	