

Outsourcing, offshoring, and trade: identifying foreign activity across Census data products

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6 November 2009

NAPA Washington, DC

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Motivation

- Magnitude of outsourcing and offshoring
- Relationship with firm characteristics
 - Wages, employment
 - Capital investment, productivity
- Data collection and response accuracy
 - Economic Census (2007)
 - Foreign trade data

2007 Economic Census Special Inquiry

1. Did this establishment design, engineer, or formulate the manufactured products that it sold, produced or shipped?
 - Yes / No

2. Which of the following best describe this establishment's primary activity?
 - Provide contract mfg services for others
 - Transform raw materials/components into new products
 - Resell goods manufactured by others
 - Other (specify)

2007 Economic Census Special Inquiry

3. Did this establishment purchase contract manufacturing services from other companies or other establishments of your company to process materials or components that this establishment owns or controls?

- Yes, primarily with establishments WITHIN the 50 States and the District of Columbia
- Yes, primarily with establishments OUTSIDE of the 50 States and the District of Columbia
- No

Number of Estabs. by Form Type*

<i>2007 Economic Census</i>	<i>Mfg</i>	<i>Wholesale</i>
Estabs. Responding	106,550	153,147
Own Design: Yes (%)	63,017 (60.4)	22,554 (15.0)
Primary Function: Same (%)	86,096 (84.3)	104,900 (75.1)
Primary Sourcing: None (%)	74,030 (70.9)	126,100 (85.1)

*cf. Table 1

Employment by Form Type*

<i>2007 Economic Census</i>	<i>Mfg</i>	<i>Wholesale</i>
Employees in Resp. Estabs.	9.2 mil	2.8 mil
Own Design: Yes (%)	6.1 mil (67.6)	0.5 mil (19.9)
Primary Function: Same (%)	8.0 mil (90.9)	1.8 mil (70.4)
Primary Sourcing: None (%)	5.5 mil (60.9)	2.2 mil (80.7)

*cf. Table 2

Firms by Employment Size*

<i>2007 Economic Census</i>	<i><50 empl.</i>	<i>>500 empl.</i>
No contracts (%)	122,139 (83.9)	2,007 (1.4)
Domestic outsourcers (%)	23,899 (72.1)	1,551 (4.7)
Foreign offshorers (%)	4,402 (73.0)	506 (8.4)

*cf. Table 3

Special Inquiry-Import Data Matching*

<i>2007 Economic Census</i>	<i>Resp. Firms</i>	<i>Import Match (% M val)</i>
No contracts (%)	154,961	40,827 (19)
Domestic outsourcers (%)	33,313	10,250 (16)
Foreign offshorers (%)	6,055	4,750 (14)

*cf. Table 4

Number of Firms by Form Type*

<i>2007 Economic Census</i>	<i>Mfg</i>	<i>Wholesale</i>
Firms Responding	75,677	122,227
No contracts (US)	52,629	104,087
Outsource (US)	20,991	13,700
Offshore (Foreign)	2,052	4,440

*cf. Tables 5 & 6

Traditional & Modern Manufacturing

- *Begin with a recent Federal Register Notice put out by OMB's Economic Classification Policy Committee*
 - Notice points-out some of the difficulties involved in defining what a manufacturing establishment is in the presence of outsourcing and offshoring
- *Use the Census of Manufacturing data only to look at shares of key categories of manufacturing types highlighted in notice*
 - Universe is only those plants that answered all 3 questions.....

Mfg Types: 3 Key Categories

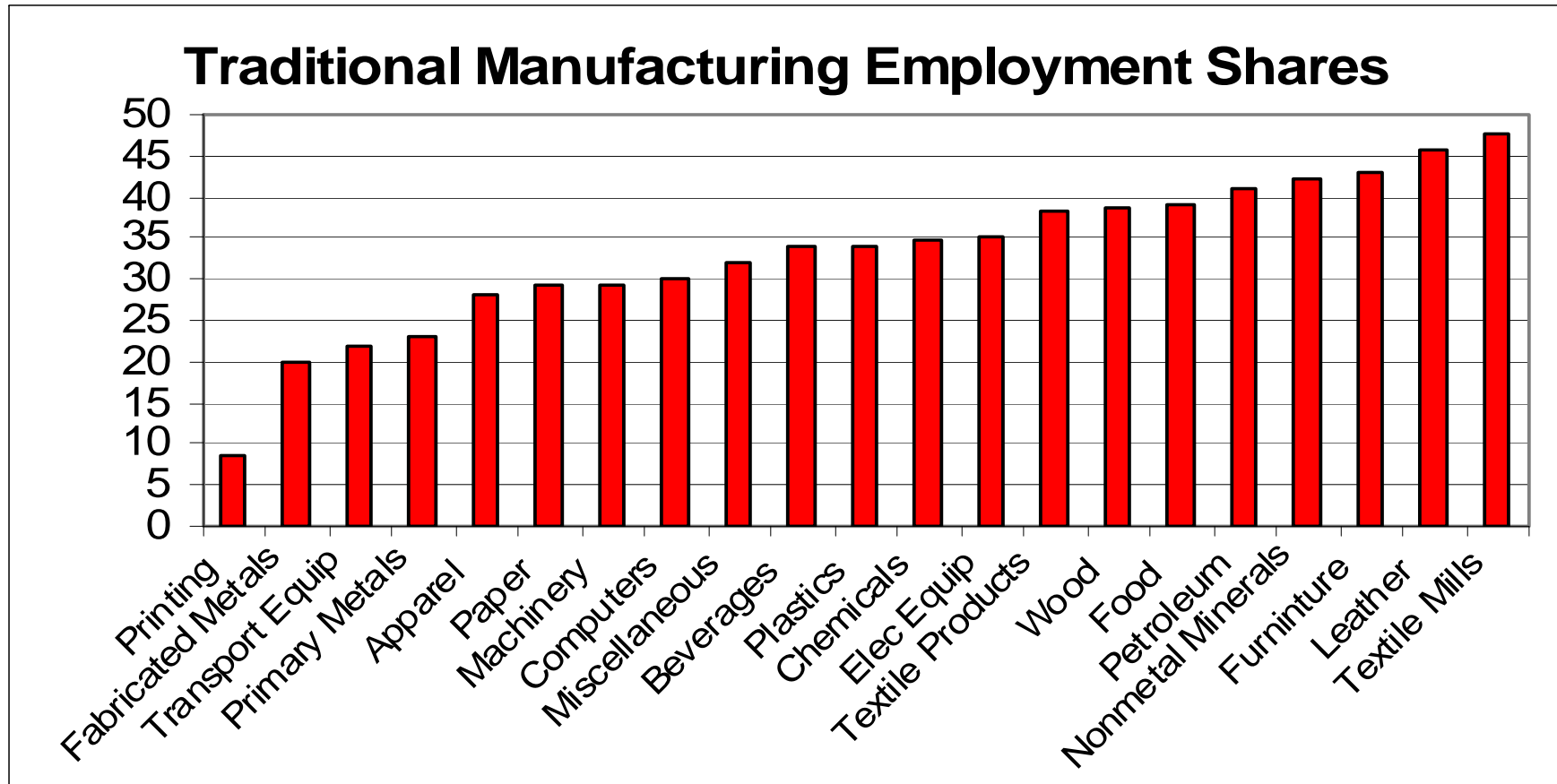
- Traditional Manufacturers:
 - Do not use outside contracts
 - Major activity = Manufacturing
 - Design goods they produce
- Manufacturing Service Providers
 - Do not use outside contracts
 - Major activity = Contracting
 - Do NOT design goods produced
- Factoryless Goods Providers
 - Contract either in or outside of U.S.
 - Major activity = Resales
 - Design goods produced

Manufacturing Type Shares

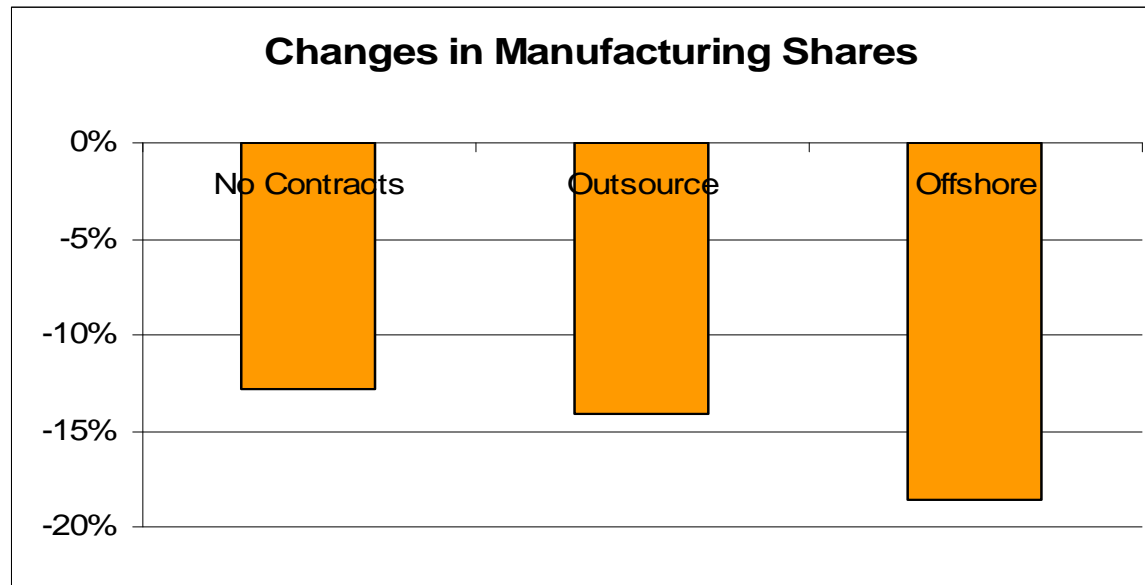
- Traditional plants a minority
- Service providers not insignificant share
- Factoryless Manufacturers very small share – properly measured?
- Most manufacturing done by hybrids

	Establishment Share (%)	Employment Share (%)
Traditional Manufacturers	28.1	30.3
Manufacturing Service Providers	11.0	6.0
Factoryless Manufacturers	0.9	0.5
All Other Types	60.0	63.2

Traditional Mfg: Variation By Industry

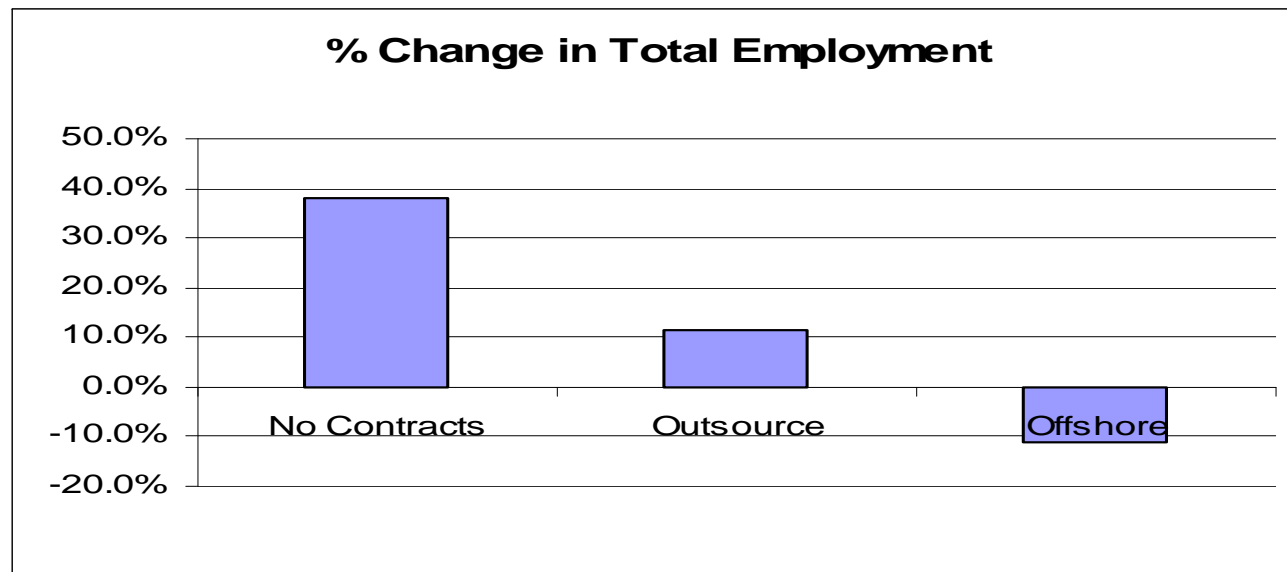


Performance Variation by Mfg Type (1)



- *Non-contractors have overall smaller change in manufacturing shares than either outsourcers or offshorers*

Performance Variation by Mfg Type (2)



- *Non-contractors have greater overall employment growth*
- *But we're not using any other controls*

Performance Variation by Mfg Type (3)

<i>Dependent Variable = Chg in % Manuf</i>			<i>Dependent Variable = Chg in Total Emp</i>		
Variable	Parameter	SE	Variable	Parameter	SE
<i>Intercept</i>	0.287	0.004	<i>Intercept</i>	0.684	0.008
<i>Firm Age</i>	-0.013	0.000	<i>Firm Age</i>	-0.044	0.001
<i># States</i>	-0.009	0.001	<i># States</i>	0.018	0.001
<i>Firm Emp (1990)</i>	0.000	0.000	<i>Firm Emp (1990)</i>	0.000	0.000
<i># of Estabs (1990)</i>	0.000	0.000	<i># of Estabs (1990)</i>	0.000	0.000
<i>Outsourcer</i>	-0.023	0.004	<i>Outsourcer</i>	0.048	0.008
<i>Offshorer</i>	-0.049	0.011	<i>Offshorer</i>	-0.075	0.022

- **Omitted firm type is non-contractors**
- **Regressions only partially verify earlier results**
- **Outsourcers and offshorers both associated with more negative change in total manufacturing than non-contractors**
 - **But outsourcing is correlated with higher employment growth controlling for other important factors**

Conclusions

- The data seem to be of good quality
- The majority of establishments do not report either outsourcing or offshoring activities
- Most reported activity is consistent with industry classifications
- Most offshorers are small but big firms more likely to offshore
- We match 78% of offshoring establishments to an import record => disproportionate

Conclusions (cont.)

- Less than one third of manufacturing activity occurs at “Traditional” manufacturing plants that design and produce their own goods.
 - 11% are “Manufacturing Service Providers”
 - Less than 1% are “Factoryless Goods Providers”
- Non-contractors had higher growth and stayed more manufacturing-intensive than either outsourcers or offshorers
 - However, controlling for other key firm characteristics outsourcers had higher growth rates