

Can Offshoring Create Domestic Jobs? Evidence from Japanese data

MITSUYO ANDO and FUKUNARI KIMURA
KEIO UNIVERSITY, TOKYO

European business is internationalising its supply chain and European manufacturing employment is falling. The correlation of these two trends - combined with a fistful of anecdotes of jobs being transferred to low wage Central European nations - has given rise to a growing choir of anxious voices. Public opinion and politicians both worried that globalisation would ship jobs overseas, hurting domestic workers.

The leading Germany weekly, *Der Spiegel*, ran a story entitled 'Deutschland: Export Weltmeister (von Arbeitsplätzen)' and similar concerns arise in the US; *Business Week's* 3 February 2003, cover story was 'Is Your Job Next?'¹ One academic branch of this concern

in Europe goes under the name of the 'bazaar economy' (Sinn, 2005).² Supply chain internationalisation has turned Germany into a bazaar with relatively little industrial value-added or employment; export competitiveness does not reflect the Ricardian comparative of German industry, but rather its increasing use of outsourcing and offshoring.³ In the US, this caused Alan Blinder to warn that 'massive transformations in the nature of work tend to bring wrenching social changes in their wake' (Blinder, 2006). In the prelude to the 2004 US election, 'outsourcing became synonymous in the public debate with job loss' (Mankiw and Swagel, 2006).

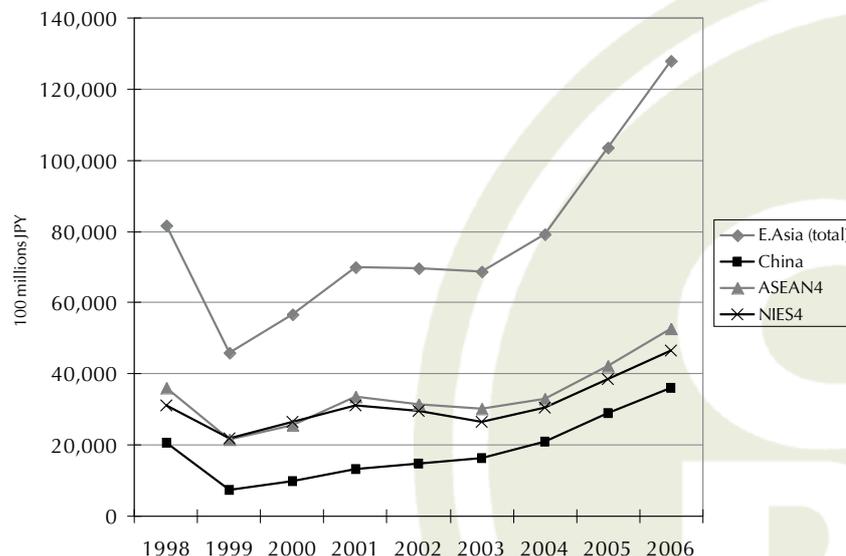
The term 'hollowing out' is not new. *Kudoka* (hollowing-out due to offshoring) has been a concern in Japan since the mid-1980s. Since it has been going on so long

1 Der Spiegel, October 25, 2004. English translation: 'Germany: World Exports Champion (of Jobs)'. *Business Week*, February 3, 2003.

2 See Belke, Mattes and Wang, 2007, Danninger, Stephan and Fred Joutz (2007).

3 See the [on-line discussion](#) by Wolfgang Munchau.

Figure 1 Direct investment position of Japan in East Asia



Data source: authors' calculation, based on balance of payments statistics available from the website of the Bank of Japan.

CEPR POLICY INSIGHT No. 16

Table 1 Sectoral patterns of Japanese parent firms and their affiliates in East Asia, North America, and Europe for 2003

Industry of parent firm	Number of all sized parent firms		Industry of affiliate						Number of SME parent firms		Number of total affiliates		Industry of affiliate					
			Manufacturing			Non-manufacturing							Manufacturing			Non-manufacturing		
			Number of affiliates	Share of Share (machinery)		Number of affiliates	Share of Share (wholesales)			Number of affiliates	Share of Share (machinery)		Number of affiliates	Share of Share (wholesales)				
(a-1) East Asia																		
Manufacturing	2,050	8,680	6,284	72.4	38.6	2,396	27.6	18.1	1,160	1,782	1,488	83.5	38.4	294	16.5	11.7		
-Machinery	1,176	4,802	3,307	68.9	35.7	1,495	31.1	20.5	511	854	682	79.9	73.4	172	20.1	15.1		
Non-manufacturing	1,392	4,292	1,402	32.7	9.8	2,890	67.3	39.4	528	1,231	432	35.1	9.5	799	64.9	49.7		
-Wholesales	744	3,383	1,281	37.9	10.3	2,102	62.1	48.7	471	1,065	407	38.2	9.6	658	61.8	56.6		
<i>Total</i>	<i>3,442</i>	<i>12,972</i>	<i>7,686</i>	<i>59.3</i>	<i>29.0</i>	<i>5,286</i>	<i>40.7</i>	<i>25.1</i>	<i>1,688</i>	<i>3,013</i>	<i>1,920</i>	<i>63.7</i>	<i>26.6</i>	<i>1,093</i>	<i>36.3</i>	<i>27.2</i>		
(b-1) North America																		
Manufacturing	1,153	3,147	1,317	41.8	26.1	1,830	58.2	22.3	305	353	187	53.0	28.0	166	47.0	34.6		
-Machinery	683	2,129	787	37.0	35.6	1,342	63.0	22.0	194	213	101	47.4	44.1	112	52.6	41.3		
Non-manufacturing	563	1,347	221	16.4	5.4	1,126	83.6	39.0	240	270	31	11.5	8.5	239	88.5	57.8		
-Wholesales	341	919	207	22.5	7.0	712	77.5	53.8	161	198	29	14.6	10.6	169	85.4	75.3		
<i>Total</i>	<i>1,716</i>	<i>4,494</i>	<i>1,538</i>	<i>34.2</i>	<i>19.9</i>	<i>2,956</i>	<i>65.8</i>	<i>27.5</i>	<i>545</i>	<i>623</i>	<i>218</i>	<i>35.0</i>	<i>19.6</i>	<i>405</i>	<i>65.0</i>	<i>44.6</i>		
(c-1) Europe																		
Manufacturing	647	2,675	1,005	37.6	24.9	1,670	62.4	37.5	100	131	60	45.8	23.7	71	54.2	40.0		
-Machinery	416	1,871	635	33.9	33.2	1,236	66.1	39.2	70	87	32	36.8	35.6	55	63.2	50.6		
Non-manufacturing	322	1,081	156	14.4	5.4	925	85.6	37.8	97	131	11	8.4	9.8	120	91.6	39.2		
-Wholesales	191	843	145	17.2	6.2	698	82.8	47.3	76	112	11	9.8	8.0	101	90.2	73.2		
<i>Total</i>	<i>969</i>	<i>3,756</i>	<i>1,161</i>	<i>30.9</i>	<i>19.3</i>	<i>2,595</i>	<i>69.1</i>	<i>37.5</i>	<i>197</i>	<i>262</i>	<i>71</i>	<i>27.1</i>	<i>15.3</i>	<i>191</i>	<i>72.9</i>	<i>51.1</i>		

Data source: authors' calculation, based on METI database.

Notes: The figures for (a-1, b-1, c-1) are those of all sized parent firms and figures for (a-2, b-2, c-2) are of parent SMEs. The figures for "share" for manufacturing, machinery, non-manufacturing, and wholesales express the shares of manufacturing affiliates, machinery affiliates, non-manufacturing affiliates, and wholesales affiliates in total number of affiliates of all sized/SMEs firms in each sectoral category.

in Japan, it is natural place to look to the Japanese data for the employment impact of this new form of manufacturing organisation.

Jobs and offshoring

Leaving aside the most naïve, flat-world thinking of political journalists who stray into economics, no one believes that one job offshored is one job lost. Theoretically, the effect of offshore outsourcing on domestic operations may be positive or negative. The outcome depends on whether the cost savings from offshoring make the firm more competitive, inducing it to expand at home, and whether the activities abroad are complementary to domestic operations. Thus, the effect of foreign direct investment (FDI) on the home labour market is an empirical issue. This Policy Insight examines the globalising activities of Japanese firms, with a particular emphasis on East Asia.

...the globalisation of Japanese firms' production processes may be complementing domestic operations rather than substituting for them.

From the mid-1980s, East Asian firms began to 'unbundle' their manufacturing processes by slicing up the value-added chain, a trend that accelerated in the 1990s. This fragmentation of production processes across the region resulted in a massive increase in the vertical trade of parts and components. Japanese firms have been major players in these international production and distribution networks, especially in the manufacturing sectors. As these firms have expanded their manufacturing operations in labour-abundant neighbours such as China particularly recently, some in Japan have shared the fears expressed in Europe and North America about the impact of firms investing abroad to take advantage of the large wage gap between developed and developing countries (Figure 1). In this *Policy*

Insight, we use extensive data on the behaviour of Japanese firms expanding and not expanding their operations in East Asia to assess whether offshoring is a boon or bane to domestic manufacturing.⁴

'Factory Asia'

Japanese firms primarily offshore into East Asia. In our data set, more than 80% of Japanese firms with affiliates abroad had at least one affiliate in East Asia in 2003. These affiliates are mostly fragments of the production process: Japanese manufacturing parent firms have 72% of their total affiliates in East Asia in manufacturing sectors. In contrast, Japanese manufacturing firms' affiliates are primarily engaged in non-manufacturing activities in Europe (62%) and North America (58%). Japanese manufacturing investment in these regions serves primarily to establish a marketing presence or produce goods for sales in the local market, rather than integrating the affiliates into a vertical production chain sometimes dubbed 'Factory Asia.' The details are shown in Table 1.

During the period described by our data, 1998 - 2003, Japanese firms intensified the fragmentation of production processes. More than 12% of manufacturing firms expanded their activities in East Asia. As these firms globalised, what happened to their domestic operations?

A cursory examination of the data suggests that offshoring did not reduce domestic employment. While the majority of firms shed jobs between 1998 and 2003, those expanding their operations in East Asia did so much less than those that did not. Manufacturing firms going abroad for the first time averaged domestic employment growth of 9.1% and firms expanding their

⁴ Our data come from a comprehensive survey of firms with more than 50 workers or capital exceeding 30 million yen conducted by the Japanese government's Ministry of Economy, Trade, and Industry for fiscal years 1998 - 2003.

Table 2 Globalizing firms and their domestic employment from 1998 to 2003

	Share of firms with reduction	Domestic employment Average growth rates at the firm level	Aggregate change
Manufacturing firms			
No entry in East Asia	67%	-0.051	-149,154
Expansion in East Asia	68%	-0.022	-188,023
Expansion in East Asia (new entry)	59%	0.091	-20,418
Shrinkage in East Asia	78%	-0.108	-114,570
Shrinkage in East Asia (exit)	82%	-0.172	-8,873
Steady in East Asia	73%	-0.082	-51,548
<i>Total</i>	67%	-0.052	-532,586
Manufacturing SMEs			
No entry in East Asia	65%	-0.032	-45,401
Expansion in East Asia	52%	0.212	173
Expansion in East Asia (new entry)	55%	0.173	1,267
Shrinkage in East Asia	71%	0.081	-804
Shrinkage in East Asia (exit)	86%	-0.113	-616
Steady in East Asia	66%	0.006	-3,546
<i>Total</i>	65%	0.000	-48,927

offshoring only cut domestic employment by 2.2% (see Table 2). In sharp contrast, manufacturing firms with no change in their offshore presence reduced domestic employment by more than 5%, and those reducing their East Asian operations cut jobs by more than 10%. Amongst manufacturing small and medium enterprises (SMEs), those retreating from East Asia reduced their domestic employment, while firms maintaining or expanding their offshore operations added more employees at home. Moreover, all types of firms going to East Asia for the first time tend to increase the number of domestic establishments and domestic affiliates, rather than diminishing their operations in Japan.

...expanding horizons are associated with an 8% increase in domestic employment over a five year period, compared with others.

These statistics suggest that the globalisation of Japanese firms' production processes may be complementing domestic operations rather than substituting for them. At the firm level, pursuing FDI in East Asia is associated with positive impacts on employment, establishments, and affiliates at home.

Complementary Operations

Formal statistical methods demonstrate that this correlation holds when we control for other variables, such as firm size, capital-intensity, the ratio of foreign to domestic sales, research and development activity, advertising expenditures, and foreign capital holding the firm (Ando and Kimura 2007). For manufacturing firms, expansion of operations in East Asia is positively associated with no decline in domestic employment. This correlation is mostly absent for non-manufacturing firms (mostly in the wholesale trade sector in our dataset), suggesting that the globalisation of manufacturing impacts domestic operations differently to foreign operations in other sectors. Similarly, manufacturing firms expanding operations in East Asia have domestic employment growth rates of 3 to 8 percentage points greater than other manufacturing firms, while the positive effect of offshoring on domestic employment is not as statistically robust for non-manufacturing firms.

Although domestic employment in manufacturing sectors declined from 1998 to 2003, the globalisation of corporate manufacturing activities partially offset job destruction and in some cases even contributed to domestic job creation at the firm level. Our analysis also shows no statistically significant relationship between the expansion of manufacturing operations in East Asia and a decline in the number of domestic establishments or affiliates. Domestic and foreign operations appear to be complements, not substitutes.

The domestic employment expansion by Japanese manufacturing firms with growing operations in East Asia may reflect a need to expand domestic production of key parts and components exported to East Asia or an intensified specialisation in headquarters services at home as a result of fragmentation of production. An

alternative explanation may be that globalising manufacturing firms succeed in differentiating products produced in the domestic market from those produced elsewhere in East Asia.

Formal statistical analysis also reveals that the positive impacts of globalising manufacturing activities on domestic employment may grow with time. While expanding operations abroad are correlated with a 3% increase in domestic employment over a one year horizon, they are associated with an 8% increase over a five year period, compared with others.

Finally, our analysis shows that firms expanding their activities abroad increase both their import and export volumes in East Asia relative to total sales. This intensification of transactions with East Asia supports the hypothesis that manufacturing firms' offshoring fragments the production process across countries rather than duplicating operations abroad. In the development of production and distribution networks in East Asia, trade and foreign direct investment are complementary activities. This implies that domestic and foreign operations are complements too.

Concluding remarks

Japanese firms are major players in East Asian production and distributions networks, and the acceleration of Japanese investment in East Asia, especially in manufacturing, over the last decade has spurred fears that Japanese domestic production may be hollowed-out by offshoring. However, the data demonstrate complementarity between firm-level trade and FDI, suggesting an increasing unbundling of manufacturing processes across production and distribution networks in East Asia. Therefore, firms establishing affiliates abroad need not shrink their domestic activities, as these operations are often complementary to the rest of the value added chain.

In East Asia, at least, there is evidence that domestic workers ought to welcome offshoring by their employers.

Using comprehensive firm-level data, we examine the relationship between firms' offshoring of activities and their domestic operations. The statistics and our formal analysis both suggest that globalising manufacturing firms are less likely to reduce their domestic employment than other firms. In fact, controlling for other firm characteristics, they experience greater job creation at a rate as high as 8%. Unfortunately, the dataset does not permit analyses of the skill structure of labour that is directly employed. We do clearly observe, however, that Japanese manufacturing firms intensifying operations in East Asia tend to retain domestic operations, including employment, more successfully than other manufacturing firms - particularly in the case of SMEs globalising their activities. Indeed, we find that SMEs expand domestic operations while offshoring.

These findings provide evidence that fears of offshoring may be unwarranted. Increased globalisation of manufacturing processes does not necessarily imply a

hollowing-out of domestic production and, in Japan's recent experience, firms that go abroad expand employment at home relative to non-globalisers. In East Asia, at least, there is evidence that domestic workers ought to welcome offshoring by their employers.

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Mitsuyo Ando is a Senior Assistant Professor of International Economics at Faculty of Business and Commerce , Keio University in Japan. She holds a Ph.D. in Economics from the Graduate School of Economics, Keio University. Prior to the current affiliation, she served as Assistant Professor at Faculty of Economics, Hitotsubashi University; Researcher at the Mitsubishi Economic Research Institute; Research Associate at the Faculty of Economics, Keio University; Research Analyst at the World Bank Institute; Intern at the Integration, Trade and Hemispheric Issues Division, Integration and Regional Programs Department, Inter-American Development Bank. She specializes in international trade and development economics. Her research interests include fragmentation and international production networks particularly in East Asia, FTAs/RTAs, NTMs, and intra-industry trade.

Fukunari Kimura has been Professor, Faculty of Economics, Keio University, Tokyo, Japan since 2000. He was born in Tokyo in 1958 and received his Bachelor of laws from the Faculty of Law, University of Tokyo in 1982, his Master of Science and Ph.D. in economics from the Department of Economics, University of Wisconsin-Madison in 1990 and 1991. He worked for the International Development Center of Japan as Researcher in 1982-1986, the Department of Economics, State University of New York at Albany as Assistant Professor in 1991-1994, and the Faculty of Economics, Keio University as Associate Professor in 1994-2000. He has also conducted numerous advisory/consultant jobs for the Government of Japan, industrial associations, the World Bank, the Inter-American Development Bank, and others. His major is international trade and development economics. In particular, he has recently been active in writing academic/semi-academic books and articles on international production networks and economic integration in East Asia. His hobby is to visit factories and industrial estates in developing countries.

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