The Effects of Joining Multinational Supply Chains: New Evidence from Firm-to-Firm Linkages*

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This paper investigates the effects of becoming a supplier to multinational corporations (MNCs) using administrative data tracking all firm-to-firm transactions in Costa Rica. Event-study estimates reveal that after starting to supply to MNCs, domestic firms experience strong and persistent improvements in performance, including the expansion of their workforce by 26% and gains in standard measures of total factor productivity (TFP) of 6-9% four years after. Moreover, the sales of domestic firms to buyers other than the first MNC buyer grow by 20%, both through a larger number of buyers and larger sales per buyer. We propose a simple model by which TFP and reputation affect the number of buyers, but TFP alone affects sales conditional on buying. We find a model-based increase in TFP of 3% four years after. Finally, we collect survey data from managers in both domestic firms and MNCs for further insights on mechanisms. Our surveys suggest that becoming suppliers to MNCs is transformative for domestic firms, with changes ranging from new managerial practices to better reputation.

JEL Codes: F14, F23, F61, O12, D22, D24.

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Table 8: Heterogeneity in Performance Gains Based on Domestic Firm (MNC) Sector

	DOM MFG (1)	DOM RET (2)	DOM SER (3)	DOM AGR (4)	DOM MFG (5)	DOM RET (6)	DOM SER (7)	DOM AGR (8)	MNC MFG (9)	MNC RET (10)	MNC SER (11)	MNC AGR (12)
4 years before event	-0.03	0.02	0.06	0.06	-0.04	-0.02	0.08	-0.11	-0.05	-0.07	-0.00	0.04
	(0.04)	(0.02)	(0.04)	(0.09)	(0.08)	(0.03)	(0.09)	(0.15)	(0.05)	(0.08)	(0.06)	(0.10)
3 years before event	-0.03	0.01	0.04	0.04	-0.02	-0.01	0.04	-0.11	-0.08**	-0.01	-0.00	0.05
	(0.03)	(0.01)	(0.04)	(0.08)	(0.05)	(0.02)	(0.07)	(0.11)	(0.04)	(0.05)	(0.04)	(0.08)
2 years before event	-0.00	0.01	-0.00	0.01	0.00	0.00	0.03	-0.06	-0.00	-0.00	-0.01	0.04
	(0.03)	(0.01)	(0.03)	(0.06)	(0.04)	(0.01)	(0.04)	(0.08)	(0.02)	(0.03)	(0.03)	(0.05)
Year of event	0.04**	0.04***	0.04*	-0.06	0.06*	0.05***	0.02	0.00	0.08***	0.01	0.03	0.02
	(0.02)	(0.01)	(0.03)	(0.05)	(0.03)	(0.01)	(0.04)	(0.08)	(0.02)	(0.03)	(0.03)	(0.05)
1 year after event	0.10***	0.05***	0.06**	-0.04	0.13**	0.07***	0.02	0.08	0.12***	0.03	0.07*	-0.02
	(0.02)	(0.01)	(0.02)	(0.06)	(0.05)	(0.02)	(0.06)	(0.11)	(0.03)	(0.05)	(0.04)	(0.08)
2 years after event	0.09***	0.05***	0.06**	-0.03	0.13*	0.08**	0.01	0.15	0.13***	0.04	0.08	0.01
	(0.02)	(0.01)	(0.03)	(0.06)	(0.07)	(0.03)	(0.08)	(0.15)	(0.05)	(0.07)	(0.05)	(0.10)
3 years after event	0.07**	0.05***	0.08***	0.03	0.12	0.08**	0.01	0.23	0.16***	0.05	0.07	-0.06
	(0.03)	(0.01)	(0.03)	(0.07)	(0.09)	(0.04)	(0.11)	(0.20)	(0.06)	(0.09)	(0.07)	(0.12)
4 years after event	0.11***	0.04***	0.06*	0.02	0.18*	0.08	-0.02	0.24	0.17**	0.04	0.07	-0.03
	(0.03)	(0.01)	(0.03)	(0.09)	(0.11)	(0.05)	(0.13)	(0.25)	(0.07)	(0.11)	(0.08)	(0.16)
Mean Dep. Var. (level)	0.96	0.73	1.22	1.16	0.96	0.74	1.22	1.00	0.92	0.86	0.94	0.82
SD Dep. Var. (level)	0.41	0.34	0.67	0.91	0.44	0.33	0.72	0.73	0.54	0.44	0.54	0.64
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-2DSect-Prov FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Never Suppliers	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No
Adjusted R^2	0.60	0.57	0.71	0.67	0.60	0.57	0.75	0.68	0.73	0.69	0.77	0.79
# Observations	9,806	33,550	17,998	4,929	2,792	7,836	3,822	1,039	5,904	2,920	4,489	837
# Fixed Effects	2,076	5,374	4,498	894	910	1,306	1,340	246	1,797	957	1,407	314
# Firms	1,424	5,164	3,389	788	396	1,099	722	161	923	451	716	120

Notes: Table 8 shows the results of running the event-study specification (1) adapted to the TFP index (constructed under the assumption of a Cobb-Douglas production function) as the dependent variable. All regressions have the same dependent variable, but differ in the sample over which the regression is run. Columns (1)-(8) separate firms based on the sector of the domestic firm (DOM). The four largest sectoral groups are manufacturing (MFG), retail (including repair and maintenance, RET), services (SER), and agriculture (AGR). Columns (9)-(12) separate firms based on the sector of the first MNC buyer. The event is defined as a first time sale to an MNC. θ_{-1}, the coefficient of the year prior to a first sale to an MNC, is normalized to zero. These regressions do not include the vector of firm-level time-varying characteristics, X_{it}, but include firm and two-digit sector $\times$ province $\times$ calendar year fixed effects. Columns (1)-(4) pertain to the full sample including both domestic firms that become first-time suppliers to an MNC between 2010 and 2015 and domestic firms never observed as supplying to an MNC between 2008 and 2017. Columns (5)-(12) focus only on the restricted sample of first-time suppliers. Robust standard errors in parentheses. ***,**,* denotes statistical significance at the 1%, 5%, and 10% levels, respectively.