

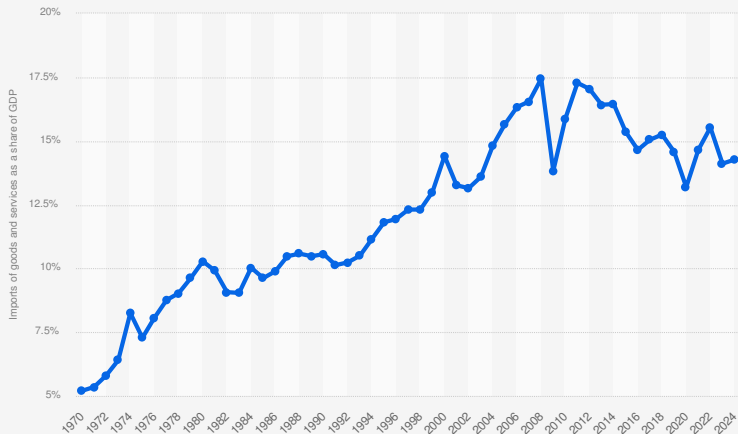
Acquiring Supplier Networks: Domestic Mergers for International Supply Chain Resilience

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Global Value Chain: Globalization and Deglobalization

Imports of goods and services as a share of GDP in the United States from 1970 to 2024



Source
World Bank
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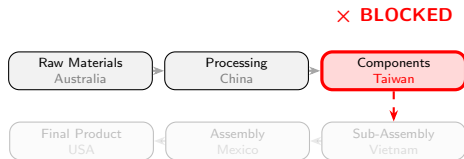
Additional Information:
United States; World Bank; 1970 to 2024

Supply Chain: Efficiency vs. Fragility

Two dominant GVC architectures — both vulnerable to single-point disruptions

The Snake

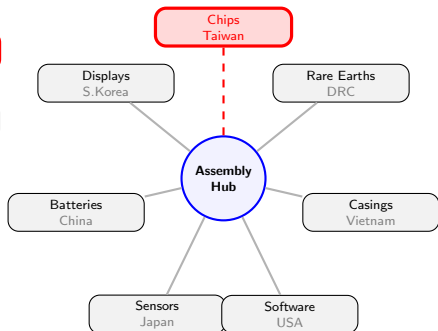
Sequential — each stage feeds the next



"A chain is only as strong as its weakest link"

The Spider

Hub-and-spoke — components converge on one point

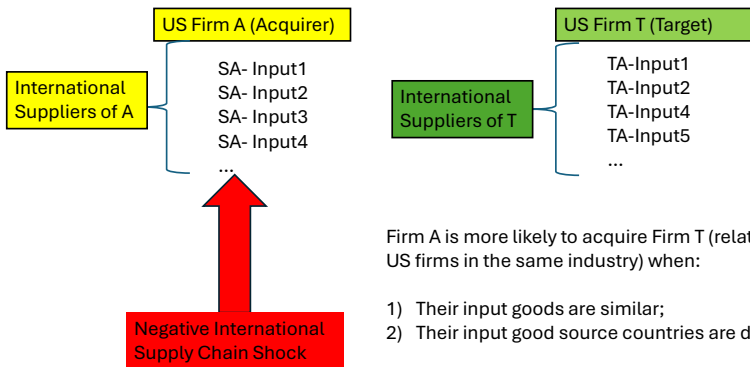


"Every spoke is a single point of failure"

Why (Re)Building New Supplier Relationships Is So Hard

- **Search and screening costs:** Identifying qualified foreign partners, vetting quality, ensuring compliance are costly. Onboarding a new supplier often takes up to **six months** (ISM, 2021).
- **Contracting frictions and hold-up risk:** Weak cross-border legal enforcement; relationship-specific investments create hold-up risk (Anràs & Chor, 2021). Firms depend on **relational contracting**.
- **Building trust takes time:** Relational contracts are built through **repeated transactions**; trade volume increases with relationship age (Anràs & Foley, 2015; Monarch & Schmidt-Eisenlohr, 2017).
- ⇒ Long-standing buyer–supplier relationships are **valuable intangible assets**: costly and time-consuming to build from scratch.

Our Main Story in A Diagram



Firm A is more likely to acquire Firm T (relative to other US firms in the same industry) when:

- 1) Their input goods are similar;
- 2) Their input good source countries are different;

Why Domestic M&As? Advantages over Alternatives

- M&As are very costly tools.
- Advantages of Domestic M&A vs. Alternatives
 - vs. Organic Search of International Suppliers: acquire a **bundle of** imported input goods at the same time instead of establishing relationships one-by-one;
 - vs. Vertical M&As with International Suppliers: Avoid **regulatory risks** under geopolitical risks;
 - vs. Recruitment of Supply-Chain Procurement Officers: Obtain both **contractual and implicit** relationships at the same time
- Ultimately, it is about the **speed** of adjustment.

Research Questions and Our Answers

- 1 Do U.S. firms use **domestic M&A** to acquire targets' international supplier networks?
 - Yes, particularly when the target imports similar input goods from different countries as the acquirer;
 - The effect is stronger when acquirers face higher international supply-chain risks.
- 2 **How** do acquirers learn about targets' supply chains?
 - Labor mobility: ex-employees from target firms;
 - Screening of Data scientists.
- 3 What **real changes** occur after the merger?
 - Targets' supply-chain talents are retained instead of being laid off;
 - Acquirers start buying from targets' international suppliers (particularly long-standing ones);
 - Acquirers' overall supply-chain risk goes down.
- 4 Are there any **competitive effects**?
 - Targets' rivals lose access to acquirer' suppliers.

Data and IIS Measure

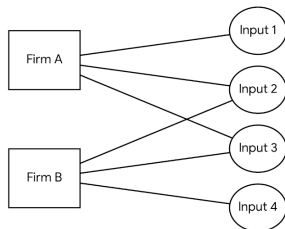
- **S&P Panjiva:** Universe of **sea-based U.S. imports**, 2007–2020 (mandatory CBP filings).
 - Importer/exporter names, origin country, HS6 product codes, quantities.

- **Imported Input Similarity (IIS):**

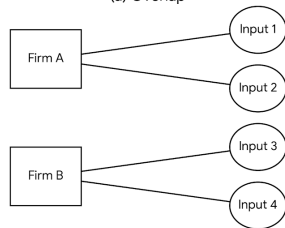
$$IIS_{i,j,t} = \frac{V_{i,t} \cdot V_{j,t}}{\|V_{i,t}\| \|V_{j,t}\|}$$

where $V_{i,t}$ = firm i 's HS6 import volume vector.

- $IIS \in [0, 1]$: 0 = no overlap; 1 = identical mix.
- **Also construct:**
 - **Supplier Similarity:** cosine on supplier identities.
 - **Industry IIS:** target vs. acquirer's peers.
 - **China IIS:** acquirer's China inputs vs. target's non-China inputs.



(a) Overlap



(b) No overlap

M&A Sample and Placebo Design

- **SDC M&A Database:** Mergers, acquisitions of majority interest or assets; deal value $> \$1M$; acquirer: U.S. public; non-financial; both parties have Panjiva import records in $t-1$.
- **Final sample: 1,137 deals** (2007–2021).
 - ~ 553 with $IIS > 0$; ~ 584 with $IIS = 0$. Targets can be public or private.
- **Placebo deals:** For each deal participant, select up to **5 firms** from the same 3-digit SIC with closest import volumes; no M&A activity during sample period.
 - \Rightarrow Up to **10 placebo pairs per actual deal** (5 with actual acquirer; 5 with actual target).
- A **cohort** = 1 actual deal + its corresponding placebo deals.
- All regressions include **cohort FE** \rightarrow identification from **within-cohort** variation.
- SEs clustered at the deal-cohort level.

[▶ Summary Statistics](#)

Baseline Specification

- **Unit of observation:** acquirer–target–announcement-year (i, j, t).

Equation (1): Merger likelihood

$$True_{i,j,t} = \beta_1 IIS_{i,j,t} + \beta_2 SupplierSim_{i,j,t} + \beta_3 ProductSim_{i,j,t} + \Gamma' X_{i,t}^A + \mu_{cohort} + \varepsilon_{i,j,t}$$

- $True_{i,j,t} = 1$ for the **actual** acquirer–target pair; 0 for placebo pairs.
- **IIS:** cosine similarity of imported inputs (HS6 volumes).
- **Supplier Similarity:** cosine similarity of international supplier identities.
- **Product Similarity:** Hoberg–Phillips TNIC3 score (public targets only).
- $X_{i,t}^A$: acquirer controls — $\ln(Assets)$, leverage, capex/assets, cash/assets, dividend payout, Tobin's Q , ROA.

Key prediction: $\beta_1 > 0$ — targets importing similar inputs are more attractive because the acquirer gains access to alternative supplier networks.

Baseline Result: IIS Predicts Mergers

- A one-SD increase in IIS raises the probability of a merger by **3.2 percentage points**.

	(1)	(2)	(3)	(4)	(5)
VARIABLES	Public&Private Target True	Public&Private Target True	Public Target True	Public Target True	Public Target True
<i>IIS</i>	0.239*** (0.042)	0.218*** (0.042)	0.143** (0.058)	0.121** (0.059)	0.145** (0.061)
<i>Supplier Similarity</i>	0.649*** (0.183)	0.654*** (0.180)	0.519*** (0.191)	0.171 (0.246)	
<i>Industry IIS</i>	0.390*** (0.108)	0.380*** (0.106)	0.300* (0.153)	0.264* (0.152)	0.250 (0.152)
<i>Product Similarity</i>				2.040*** (0.309)	2.097*** (0.306)
<i>Acquirer LogAsset</i>		0.025*** (0.002)	0.032*** (0.003)	0.031*** (0.003)	0.031*** (0.003)
<i>Acquirer Leverage</i>		-0.021 (0.014)	0.025 (0.025)	0.029 (0.024)	0.030 (0.024)
<i>Acquirer Capex</i>		-0.425*** (0.080)	-0.260* (0.136)	-0.278** (0.138)	-0.275** (0.138)
<i>Acquirer Cash</i>		-0.041 (0.027)	-0.001 (0.053)	-0.020 (0.053)	-0.020 (0.053)
<i>Acquirer Dividend</i>		-0.010 (0.112)	0.080 (0.152)	0.044 (0.162)	0.043 (0.159)
<i>Acquirer TobinQ</i>		0.006** (0.003)	0.004 (0.005)	0.003 (0.005)	0.003 (0.005)
<i>Acquirer ROA</i>		0.127*** (0.022)	0.074** (0.037)	0.084** (0.037)	0.083** (0.037)
Cohort FE	Yes	Yes	Yes	Yes	Yes
SE Clustered (Cohort)	Yes	Yes	Yes	Yes	Yes
Observations	10,017	10,017	3,183	3,183	3,183
R-squared	0.034	0.054	0.111	0.069	0.111

Do Acquirers Pay for IIS? Input Similarity and Target CAR

- Targets with **overlapping imported inputs (IIS > 0)** are associated with **higher deal announcement CARs**.
- Average target CARs: **26.4%** for IIS > 0 deals vs. **22.5%** for IIS = 0 deals.

VARIABLES	(1) Target CAR [-1,+1]	(2) Target CAR [-1,+1]	(3) Target CAR [-1,+1]
Dummy for IIS>0	0.072*** (0.026)	0.068** (0.031)	0.071** (0.032)
Product Similarity	-0.039 (0.145)	0.010 (0.156)	-0.067 (0.161)
Target Lnnasset	-0.057*** (0.008)	-0.070*** (0.010)	-0.071*** (0.010)
Target TobinQ	-0.016 (0.010)	-0.020* (0.011)	-0.018 (0.012)
Target leverage	0.037 (0.059)	0.028 (0.071)	0.015 (0.074)
Target cash	0.135 (0.121)	0.110 (0.135)	0.090 (0.140)
Target ROA	-0.101 (0.096)	-0.008 (0.103)	0.027 (0.107)
Target stock performance (pre-deal)	-0.196*** (0.038)	-0.219*** (0.041)	-0.228*** (0.044)
Relative transaction value	-24.741 (20.769)	-22.339 (22.241)	-24.274 (22.870)
SameSIC2	0.013 (0.028)	-0.002 (0.032)	0.005 (0.033)
SIC2 FE (target SIC2)	No	Yes	Yes
Year FE	No	No	Yes
Observations	277	265	265
R-squared	0.304	0.383	0.412

The Resilience Motive: Supply-Chain Risk

- **Prediction:** IIS effect should be **stronger when supply-chain risk is higher**.
- Interact IIS with: (1) Firm-specific SC risk (Ersahin et al., 2024); (2) Economy-wide SC risk; (3) Trade policy uncertainty (Caldara et al., 2020).

	(1) Public&Private Target True	(2) Public&Private Target True	(3) Public Target True	(4) Public Target True	(5) Public Target True
<i>VARIABLES</i>					
<i>IIS</i> × <i>SC Risk</i> _{<i>t-1</i>}	0.004 (0.004)	0.004 (0.004)	0.009*** (0.002)	0.006** (0.002)	0.005** (0.002)
<i>IIS</i>	0.299*** (0.054)	0.285*** (0.054)	0.183** (0.082)	0.177** (0.081)	0.247*** (0.081)
<i>Supplier Similarity</i>	0.718*** (0.176)	0.721*** (0.171)	0.674*** (0.187)	0.487* (0.267)	
<i>SC Risk</i> _{<i>t-1</i>}	0.000 (0.000)	0.000 (0.000)	-0.001 (0.000)	-0.001 (0.000)	-0.001 (0.000)
<i>Product Similarity</i>				2.540*** (0.447)	2.613*** (0.452)
Control Variables	Yes	Yes	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes	Yes
SE Clustered (Cohort)	Yes	Yes	Yes	Yes	Yes
Observations	6,850	6,850	2,156	2,156	2,156
R-squared	0.060	0.073	0.095	0.151	0.146

- **IIS × SC Risk:** positive and significant **for public targets**. Not significant for full sample (private targets reflect routine, long-term strategies).
- Public targets are larger with the bundle of international suppliers that the acquirer need → better for **immediate risk mitigation**.

Diversifying Away from China (Post-2020)

- **China IIS**: cosine similarity between acquirer's **China-sourced inputs** and target's inputs **not sourced from China**.

	(1) Public&Private Target True	(2) Public&Private Target True	(3) Public Target True	(4) Public Target True	(5) Public Target True
<i>China IIS×Post</i>	0.072 (0.152)	0.072 (0.147)	0.652*** (0.246)	0.696*** (0.244)	0.714*** (0.247)
<i>China IIS</i>	0.224*** (0.054)	0.214*** (0.053)	0.143* (0.083)	0.144* (0.077)	0.152* (0.078)
<i>Supplier Similarity</i>	0.826*** (0.170)	0.814*** (0.168)	0.630*** (0.178)	0.255 (0.233)	
<i>Product Similarity</i>				2.073*** (0.311)	2.176*** (0.304)
Control Variables	Yes	Yes	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes	Yes
SE Clustered (Cohort)	Yes	Yes	Yes	Yes	Yes
Observations	10,017	10,017	3,183	3,183	3,183
R-squared	0.028	0.049	0.069	0.112	0.110

- China IIS is significant across the full sample → diversifying away from China has been a motive **throughout the sample period**.
- For public targets, China IIS × Post (post-2020) is **positive and highly significant** → China diversification motive **accelerated after COVID-19**.

▶ Same vs. Different Industry

Tariff Shock and Mitigation: The Construct

Idea: Does the target's pre-deal import portfolio help the acquirer substitute away from China in tariff-affected products?

Notation: d indexes deals; k indexes HS6 products on the tariff list.

Acquirer Tariff Exposure — share of tariff-affected imports sourced from China for product category k :

$$\text{Exposure}(d, k) = \frac{A^{\text{China}}(d, k)}{A^{\text{Total}}(d)}$$

Target's Net Alternative Sourcing in product k :

$$\text{NetAlt}(d, k) = \frac{T^{\text{NonChina}}(d, k) - T^{\text{China}}(d, k)}{T^{\text{NonChina}}(d, k) + T^{\text{China}}(d, k)} \in [-1, +1]$$

The sum of products of these two components simplifies to:

$$\text{Tariff-mitigation fit}(d) = \sum_k \underbrace{\frac{A^{\text{China}}(d, k)}{A^{\text{Total}}(d)}}_{\text{product weight}} \times \text{NetAlt}(d, k)$$

Large and positive \Leftrightarrow the acquirer is meaningfully exposed to tariffs *and* the target sources those same products from non-China origins.

Tariff Shock and Mitigation

- After U.S.–China tariff shock (post-2018), acquirers seek targets that help **substitute away from China** for tariff-affected inputs.
- **Tariff-mitigation fit:** continuous measure of how well target provides non-China sourcing alternatives for acquirer's tariff-exposed inputs.

VARIABLES	(1) Public&Private Target True	(2) Public&Private Target True	(3) Public Target True	(4) Public Target True	(5) Public Target True
<i>Tariff-mitigation fit</i> <i>×Post</i>	0.164	0.183*	0.295**	0.307**	0.306**
	(0.103)	(0.100)	(0.124)	(0.123)	(0.124)
<i>Tariff-mitigation fit</i>	-0.026	-0.024	-0.005	-0.002	-0.003
	(0.062)	(0.062)	(0.082)	(0.079)	(0.079)
<i>IIS</i>	0.257***	0.235***	0.163***	0.145***	0.167***
	(0.038)	(0.038)	(0.056)	(0.055)	(0.058)
<i>Supplier Similarity</i>	0.588***	0.598***	0.524***	0.161	
	(0.180)	(0.176)	(0.191)	(0.247)	
<i>Product Similarity</i>				2.105***	2.160***
				(0.325)	(0.324)
Control Variables	Yes	Yes	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes	Yes
SE Clustered (Cohort)	Yes	Yes	Yes	Yes	Yes
Observations	10,023	10,023	3,199	3,199	3,199
R-squared	0.032	0.052	0.072	0.116	0.116

Information Channels: How Acquirers Identify Targets

- Firms disclose major *customers* but **not suppliers** → how do acquirers learn about targets' supply chains?
- **Channel 1: People.**
 - **HasSCMove** = 1 if acquirer hired ≥ 1 former target SC employee in 3 years pre-deal.
 - HasSCMove predicts mergers for both IIS subgroups, but is **significantly stronger for IIS > 0** (difference: 0.077, $p < 0.10$ full sample; 0.107, $p < 0.01$ public).
- **Channel 2: Data capability.**
 - $\text{Log}(1 + \text{Num Data Analysts})$ at acquirer.
 - More data analysts increase merger probability **only when IIS > 0** (difference: 0.012, $p < 0.10$ full sample; 0.030, $p < 0.01$ public).
 - ⇒ Data analytics specifically useful for identifying targets with overlapping supplier networks.
- Data source: Revelio Labs career histories and job descriptions.

▶ SC Move Table

▶ Data Analyst Table

Post-Merger: More New Suppliers and Supplying Countries

- Acquirers add significantly more **new international suppliers** and source from more countries.
- $IIS > 0$ acquirers add significantly more new suppliers than $IIS = 0$ → consistent with the resilience motive.

VARIABLES	(1)	(2)	(3)	(4)
	IIS>0 Num New Supplier	IIS=0 Num New Supplier	IIS>0 Num New Country	IIS=0 Num New Country
<i>True</i>	9.188*** (2.497)	5.821*** (1.607)	0.544*** (0.188)	0.783*** (0.159)
Difference		3.367**		-0.239
Control Variables	Yes	Yes	Yes	Yes
Deal-cohort FE	Yes	Yes	Yes	Yes
Cluster at Deal-cohort Level	Yes	Yes	Yes	Yes
Observations	627	1,351	627	1,351
R-squared	0.543	0.385	0.453	0.405

▶ SC Uncertainty Table

▶ Withdrawn Deals Robustness

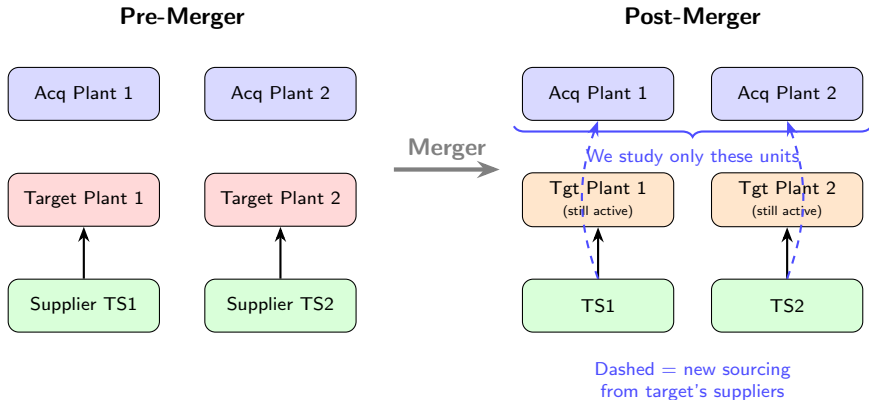
Post-Merger: Supply-Chain Uncertainty

- Actual mergers → **lower post-merger supply-chain uncertainty (Ersahin et al., 2024)**, especially when $IIS > 0$.

VARIABLES	(1)	(2)	(3)	(4)
	IIS>0 Public&Private Target	IIS=0 Public&Private Target	IIS>0 Public Target	IIS=0 Public Target
	Average Supply Chain Uncertainty Three Year Post- merger	Average Supply Chain Uncertainty Three Year Post- merger	Average Supply Chain Uncertainty Three Year Post- merger	Average Supply Chain Uncertainty Three Year Post- merger
<i>True</i>	-1.909** (0.863)	-0.244 (0.795)	-2.759** (1.188)	2.086 (1.783)
Difference		-1.665		-4.845**
Deal-cohort FE	Yes	Yes	Yes	Yes
Cluster at Deal-cohort Level	Yes	Yes	Yes	Yes
Observations	627	1,351	627	1,351
R-squared	0.543	0.385	0.453	0.405

Post-Merger Analysis: The “Restricted Sample”

- **Challenge:** Post-merger importing changes could reflect **mechanical integration** of target's operations.
- **Solution:** Require all pre-deal target consignees remain active importers. Study only **pre-deal acquirer consignees** → genuine supply-chain reconfiguration.



Granular Analysis: Acquirers Source from Target's Suppliers

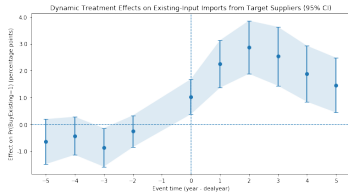
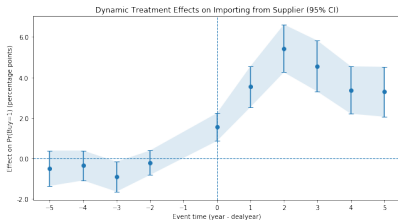
- **Unit:** acquirer i – target's supplier s – year t ($t-3$ to $t+3$).
- $Buy_{i,s,t} = 1$ if acquirer imports from target's supplier s ; also: *BuyExisting* (same products) and *BuyNew* (new products).
- Stacked DiD with acquirer \times supplier \times cohort FE and cohort \times year FE.

VARIABLES	(1) Buy	(2) BuyNew	(3) BuyExisting
Post \times True	0.042*** (0.005)	0.025*** (0.003)	0.024*** (0.004)
Control Variables	Yes	Yes	Yes
Acquirer \times Target's Supplier \times Deal Cohort FE	Yes	Yes	Yes
Cohort \times Year FE	Yes	Yes	Yes
SE Clustered (Acquirer \times Target's Supplier)	Yes	Yes	Yes
Observations	127,798	127,366	127,798
R-squared	0.513	0.365	0.526

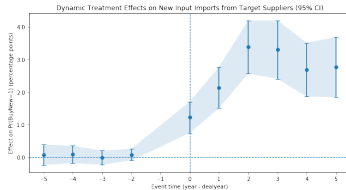
- $Post \times True$ for *Buy*: **0.042** ($p < 0.01$). Pre-deal probability: 1.7% \rightarrow **247% increase**.
- Both *BuyExisting* (0.024) and *BuyNew* (0.025) highly significant.

Event-Study Evidence

- Sharp increase in acquirer sourcing from target suppliers **after deal completion**; no pre-trends.



Existing inputs



New inputs

Long-Standing Relationships Are More Attractive; Stronger for $IIS > 0$

- If acquirers value *relational capital*, the effect should be stronger for **longer-duration** target–supplier relationships.

	Buy	BuyNew	BuyExisting
Long relationship (≥ 3 yr)	0.077***	0.035***	0.050***
Short relationship (< 3 yr)	0.030***	0.021***	0.015***
Difference	0.047***	0.014*	0.035***

- Split by deal-level IIS:

	Buy		BuyNew		BuyExisting	
	IIS>0	IIS=0	IIS>0	IIS=0	IIS>0	IIS=0
<i>Post</i> × <i>True</i>	0.052***	0.028***	0.033***	0.013***	0.033***	0.012***

⇒ Acquirers specifically value **relational capital** in long-standing relationships. Effects are **~2× larger** for $IIS > 0$ deals.

Supply-Chain Talent Is Retained (“Smoking Gun”)

- Employee-level analysis (Revelio Labs): $Leave3y = 1$ if employee leaves within 3 years (does not move to acquirer). $SC_Role = 1$ for supply-chain positions.

VARIABLES	(1)	(2)	(3)	(4)
	Experience \geq 3 years Leave3y	Experience $<$ 3 years Leave3y	Experience \geq 3 years Leave5y	Experience $<$ 3 years Leave5y
<i>SC_Role</i> \times <i>True</i> \times <i>Positive IIS</i>	-0.015** (0.007)	-0.008 (0.007)	-0.017** (0.007)	-0.011 (0.007)
<i>SC_Role</i> \times <i>Positive IIS</i>	-0.003 (0.005)	-0.006 (0.005)	-0.007 (0.006)	-0.008 (0.006)
<i>True</i> \times <i>Positive IIS</i>	-0.002** (0.001)	-0.003* (0.001)	-0.003** (0.001)	-0.004** (0.002)
<i>SC_Role</i> \times <i>True</i>	-0.001 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.000 (0.001)
<i>Positive IIS</i>	0.019*** (0.007)	0.010 (0.007)	0.021*** (0.007)	0.012* (0.006)
<i>True</i>	0.012*** (0.001)	0.013*** (0.001)	0.010*** (0.001)	0.010*** (0.001)
<i>SC_Role</i>	0.038*** (0.009)	0.029*** (0.010)	0.041*** (0.010)	0.031*** (0.011)
Deal Cohort FE	Yes	Yes	Yes	Yes
Cluster at Deal Cohort	Yes	Yes	Yes	Yes
Observations	3,376,242	2,759,465	3,376,242	2,759,465
R-squared	0.058	0.045	0.063	0.050

- $SC_Role \times True \times Positive IIS$: **-0.015**** (3-yr horizon, long-tenured employees ≥ 3 yr).
- Effect unique to **long-tenured** SC employees—those with significant relationship-specific investments.

Vertical Foreclosure: Pre-Deal Evidence

- **Mechanism:** Acquirers can leverage influence over their suppliers to **restrict collaboration** with the target's competitors—especially when the acquirer has longer relationships with these suppliers.
- *RivalPurchaseVol*: volume of goods purchased by target's competitors from acquirer's suppliers.

VARIABLES	(1) True	(2) True	(3) True	(4) True
<i>RivalPurchaseVol</i>	0.136*** (0.027)		0.113*** (0.027)	
<i>NumRivalPurchase</i>		0.001*** (0.000)		0.001*** (0.000)
<i>IIS</i>	0.166*** (0.060)	0.160*** (0.060)	0.145** (0.059)	0.139** (0.059)
<i>Product Similarity</i>	1.963*** (0.289)	1.976*** (0.291)	1.964*** (0.291)	1.972*** (0.292)
Acquirer Controls	No	No	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes
SE Clustered (Cohort)	Yes	Yes	Yes	Yes
Observations	3,183	3,183	3,175	3,175
R-squared	0.090	0.090	0.118	0.118

- Both rival-purchase measures are **positively and significantly** associated with merger likelihood.
- A one-SD increase in *RivalPurchaseVol* → **2.6 pp increase** ($\approx 23\%$ of mean).
- Effect is **amplified** when acquirer has ≥ 3 -year supplier relationships (*HighExp*).

Post-Deal: Rivals Lose Access; Target Benefits

Rivals lose access:

VARIABLES	(1)	(2)	(1)	(2)
	OLS [dealyear-3, dealyear+3] NImport	OLS [dealyear-5, dealyear+5] NImport	Poisson without fixed effects [dealyear-3, dealyear+3] NImport	Poisson without fixed effects [dealyear-5, dealyear+5] NImport
<i>Post × True</i>	-0.835*** (0.273)	-0.689*** (0.245)	-0.292** (0.132)	-0.302*** (0.112)
<i>Post</i>	-	-	-0.143*** (0.025)	-0.102*** (0.022)
<i>True</i>	-	-	0.147*** (0.027)	0.139*** (0.023)
<i>Log(NSup)</i>	0.876*** (0.145)	1.031*** (0.186)	0.077*** (0.013)	0.094*** (0.011)
<i>Log(NRival)</i>	1.875*** (0.135)	1.744*** (0.097)	0.899*** (0.010)	0.897*** (0.008)
<i>Log(Volume to Acq)</i>	-0.025 (0.049)	-0.015 (0.040)	0.040*** (0.008)	0.033*** (0.007)
Acquirer Controls	Yes	Yes	Yes	Yes
Target × Acquirer FE	Yes	Yes	No	No
Cohort × Year FE	Yes	Yes	No	No
SE Clustered (Target-Acquirer)	Yes	Yes	No	No
Observations	5,530	7,770	5,530	7,770
R-squared	0.859	0.801	0.859	0.801

$Post \times True < 0$ and significant at 1%.
Number of target rivals sourcing from acquirer's suppliers **declines** post-deal.

Target performance improves:

	Tobin's Q [t-3,t+3]	Log(Sales) [t-3,t+3]
<i>RivalPurch</i>	0.521***	0.058*
$\times Post$	(0.067)	(0.032)

- Targets experience significant gains in **Tobin's Q** and sales.
- No corresponding ROA/margin improvements → benefits from **enhanced scale**, not pricing power.

► Full Foreclosure Outcomes

Conclusion

- 1 **M&A as acquiring relational capital:** Firms with overlapping imported inputs are substantially more likely to merge. The target's long-standing supplier relationships are valuable intangible assets.
- 2 **Resilience motive:** Effect strongest when SC risk is high and post-2020 for China diversification (public targets).
- 3 **Information channels:** SC employee moves and data-analytics capability help acquirers identify targets.
- 4 **Real post-deal changes:** Acquirers source from target's suppliers (especially long-standing ones), add new suppliers, and drop existing ones—active restructuring.
- 5 **Human capital:** Long-tenured target SC employees are retained—relational capital is embodied in people.
- 6 **Competitive effects:** Foreclosure-like outcomes disadvantage target rivals; target valuation and sales improve.

Backup Slides

Backup: Related Literature

- **Supply-chain risk and firm responses:**

- Bimpikis, Fearing & Tahbaz-Salehi (2018); Elliott, Golub & Leduc (2022); Kopytov et al. (2024)
- Ersahin, Giannetti & Huang (2024); Jin, Liu & Tian (2024)

- **Relational contracting in international trade:**

- Baker, Gibbons & Murphy (2002); Antràs & Foley (2015); Macchiavello & Morjaria (2015); Monarch & Schmidt-Eisenlohr (2017); Araujo, Mion & Ornelas (2016)

- **M&A drivers and synergies:**

- Innovation: Bena & Li (2014); Phillips & Zhdanov (2013)
- Product market: Hoberg & Phillips (2010, 2016)
- Supply chain: Harford, Schonlau & Stanfield (2019); Erel, Jang & Weisbach (2022)

- **Vertical foreclosure:**

- Theory: Salinger (1988); Hart & Tirole (1990); Ordober, Saloner & Salop (1990)
- Empirics: Boehm & Sonntag (2023)

- **Margins of trade:** Bernard, Jensen, Redding & Schott (2018)

Backup: Anecdotal Evidence

1. American Eagle Outfitters & Quiet Logistics (2021, \$350M)

*“An important pillar of our strategy is **transforming our supply chain** to create greater agility, speed, and diversification.”*

— Jay Schottenstein, CEO, American Eagle Outfitters

2. LVMH & Tiffany (2019)

*“Tiffany is a very big player in all sorts of diamonds, and it’s something where **the sourcing is not easy to do**, and we expect to benefit from that.”*

— Bernard Arnault, CEO, LVMH

3. Bunge & Viterra (2023)

*“Combining Bunge and Viterra’s highly complementary global value chains ... customers will benefit from **expanded global supply options**.”*

— Bunge & Viterra merger announcement

Backup: Summary Statistics

VarName	Obs	Mean	SD	P25	Median	P75
<i>Imported Input Similarity</i>	10035	0.034	0.124	0.000	0.000	0.003
<i>Supplier Similarity</i>	10035	0.002	0.033	0.000	0.000	0.000
<i>Product Similarity</i>	3193	0.014	0.043	0.000	0.000	0.000
<i>RivalPurchaseVol</i>	10035	0.031	0.190	0.000	0.000	0.000
<i>NumRivalPurchase</i>	10035	3.069	24.029	0.000	0.000	0.000
<i>Acquirer LogAsset</i>	10035	7.479	1.990	6.130	7.550	8.759
<i>Acquirer Leverage</i>	10035	0.530	0.230	0.377	0.526	0.665
<i>Acquirer Capex</i>	10035	0.038	0.036	0.015	0.027	0.048
<i>Acquirer Cash</i>	10035	0.118	0.113	0.036	0.086	0.166
<i>Acquirer Dividend</i>	10035	0.018	0.032	0.000	0.002	0.023
<i>Acquirer TobinQ</i>	10035	1.913	1.046	1.235	1.621	2.271
<i>Acquirer ROA</i>	10035	0.031	0.111	0.010	0.049	0.085

- Mean IIS = 0.034; highly right-skewed (median = 0, P75 = 0.003).
- Supplier similarity very low (mean = 0.002) → firms import similar *products* but **not** from the same suppliers → consistent with acquiring **alternative** suppliers.

Backup: Conditional Logit Results

- Re-estimate baseline using conditional logit at the deal-cohort level.
- Col 4: coefficient on IIS = 1.178; SD(IIS) = 0.126. Implied odds change = $\exp(0.126 \times 1.178) - 1 \approx \mathbf{16\%}$ per one-SD increase.

	(1)	(2)	(3)	(4)	(5)
	Public&Private Target True	Public&Private Target True	Public Target True	Public Target True	Public Target True
VARIABLES					
<i>IIS</i>	1.747*** (0.216)	1.644*** (0.226)	1.229*** (0.377)	1.178*** (0.432)	1.365*** (0.441)
<i>Supplier Similarity</i>	2.679** (1.246)	2.712** (1.147)	2.142** (1.058)	1.240 (1.779)	
<i>Product Similarity</i>				24.091*** (3.226)	24.161*** (3.259)
Control Variables	Yes	Yes	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes	Yes
SE Clustered (Cohort)	Yes	Yes	Yes	Yes	Yes
Observations	10,023	10,023	3,199	3,199	3,199

Backup: SC Employee Moves

- **HasSCMove** = 1 if acquirer hired ≥ 1 former target SC employee in 3 years pre-deal.

	(1)	(2)	(3)	(4)
	Public&Private	Public&Private	Public Target	Public Target
	Target	Target		
	IIS>0	IIS=0	IIS>0	IIS=0
VARIABLES	True	True	True	True
<i>HasSCMove</i>	0.349*** (0.039)	0.272*** (0.040)	0.209*** (0.031)	0.102*** (0.027)
Difference		0.077*		0.107***
Control Variables	Yes	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes
SE Clustered (Cohort)	Yes	Yes	Yes	Yes
Observations	3,436	6,333	1,392	1,694
R-squared	0.146	0.100	0.132	0.099

- HasSCMove positive for both subgroups (consistent with Cen, Harford & Xie, 2025), but **significantly stronger for IIS > 0**.
- Difference: 0.077 (full, $p < 0.10$); 0.107 (public, $p < 0.01$).

Backup: Data Analyst Capability

- **Log(1+Num DA)**: number of data analysts employed by acquirer.

	(1) Public&Private Target IIS>0 True	(2) Public&Private Target IIS=0 True	(3) Public Target IIS>0 True	(4) Public Target IIS=0 True
<i>VARIABLES</i>				
<i>Log(1+Num DA)</i>	0.013** (0.005)	0.001 (0.003)	0.029*** (0.007)	-0.001 (0.005)
Difference		0.012*		0.030***
Control Variables	Yes	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes	Yes
SE Clustered (Cohort)	Yes	Yes	Yes	Yes
Observations	3,436	6,333	1,392	1,694
R-squared	0.117	0.085	0.118	0.094

- More data analysts increase merger probability **only when IIS > 0**.
- Difference: 0.012 (full, $p < 0.10$); 0.030 (public, $p < 0.01$).

Backup: Economy-Wide Supply-Chain Risk

	(1)	(2)	(3)	(4)	(5)
	Public&Private Target True	Public&Private Target True	Public Target True	Public Target True	Public Target True
<i>IIS</i> × <i>EconomySC Risk_{t-1}</i>	0.059 (0.077)	0.054 (0.077)	0.282** (0.131)	0.347*** (0.128)	0.348*** (0.128)
<i>IIS</i>	0.032 (0.322)	0.030 (0.320)	-0.988* (0.531)	-1.282** (0.535)	-1.264** (0.521)
<i>Supplier Similarity</i>	0.631*** (0.183)	0.636*** (0.180)	0.506*** (0.179)	0.154 (0.228)	
<i>Product Similarity</i>				2.081*** (0.305)	2.132*** (0.301)
<i>Acquirer LogAsset</i>		0.025*** (0.002)	0.033*** (0.003)	0.031*** (0.003)	0.031*** (0.003)
<i>Acquirer Leverage</i>		-0.020 (0.014)	0.027 (0.025)	0.033 (0.024)	0.033 (0.025)
<i>Acquirer Capex</i>		-0.418*** (0.080)	-0.243* (0.137)	-0.258* (0.137)	-0.256* (0.137)
<i>Acquirer Cash</i>		-0.039 (0.027)	0.002 (0.053)	-0.017 (0.054)	-0.017 (0.054)
<i>Acquirer Dividend</i>		-0.013 (0.112)	0.093 (0.149)	0.061 (0.156)	0.061 (0.154)
<i>Acquirer TobinQ</i>		0.006** (0.003)	0.004 (0.005)	0.003 (0.005)	0.003 (0.005)
<i>Acquirer ROA</i>		0.127*** (0.022)	0.071* (0.037)	0.081** (0.037)	0.081** (0.037)
Cohort FE	Yes	Yes	Yes	Yes	Yes
SE Clustered (Cohort)	Yes	Yes	Yes	Yes	Yes
Observations	10,017	10,017	3,183	3,183	3,183
R-squared	0.034	0.054	0.072	0.115	0.115

- *IIS* × *EconomySCRisk*: positive and significant for **public targets only** (Cols 3–5).

Backup: Trade Policy Uncertainty

VARIABLES	(1)	(2)	(3)	(4)	(5)
	Public&Private Target True	Public&Private Target True	Public Target True	Public Target True	Public Target True
<i>IIS</i> × <i>TradePolicyUncertainty</i> _{<i>t-1</i>}	0.000 (0.001)	0.000 (0.001)	0.003* (0.002)	0.003* (0.002)	0.003** (0.002)
<i>Input Similarity</i>	0.256*** (0.058)	0.232*** (0.057)	0.056 (0.085)	0.017 (0.085)	0.034 (0.087)
<i>Supplier Similarity</i>	0.629*** (0.185)	0.634*** (0.182)	0.494*** (0.191)	0.145 (0.246)	
<i>Product Similarity</i>				2.055*** (0.306)	2.104*** (0.303)
<i>Acquirer LogAsset</i>		0.025*** (0.002)	0.033*** (0.003)	0.031*** (0.003)	0.031*** (0.003)
<i>Acquirer Leverage</i>		-0.020 (0.014)	0.026 (0.025)	0.031 (0.024)	0.031 (0.024)
<i>Acquirer Capex</i>		-0.417*** (0.080)	-0.243* (0.137)	-0.260* (0.139)	-0.257* (0.139)
<i>Acquirer Cash</i>		-0.038 (0.028)	0.002 (0.053)	-0.016 (0.054)	-0.016 (0.054)
<i>Acquirer Dividend</i>		-0.015 (0.112)	0.077 (0.150)	0.042 (0.159)	0.041 (0.157)
<i>Acquirer TobinQ</i>		0.006** (0.003)	0.004 (0.005)	0.003 (0.005)	0.002 (0.005)
<i>Acquirer ROA</i>		0.126*** (0.022)	0.072* (0.037)	0.081** (0.037)	0.081** (0.037)
Cohort FE	Yes	Yes	Yes	Yes	Yes
SE Clustered (Cohort)	Yes	Yes	Yes	Yes	Yes
Observations	10,017	10,017	3,183	3,183	3,183
R-squared	0.034	0.054	0.072	0.115	0.115

- *IIS* × *TradePolicyUncertainty*: positive and significant for **public targets** ($p < 0.10$ and $p < 0.05$).

Backup: Same vs. Different Industry

- ~40% of deals involve same 3-digit SIC; ~60% different industries.
- IIS is significantly positive in **both subsamples**; coefficient ~50% larger for different-industry deals (all targets).
- $IIS \times SC$ Risk significant for public targets in **both subsamples**.
- \Rightarrow Supply-chain motive operates **across industry boundaries**.

Backup: Export Activity — Additional Measures

	(1)	(2)	(3)	(4)
	Public&Private	Public&Private	Public&Private	Public&Private
	Target	Target	Target	Target
	IIS=0	IIS>0	IIS=0	IIS>0
VARIABLES	True	True	True	True
$\text{Log}(1+\text{Export Country})_t$	0.016** (0.006)	0.024** (0.010)		
$\text{Log}(1+\text{Export Country})_{t-1}$			0.020*** (0.007)	0.024** (0.011)
	(1)	(2)	(3)	(4)
	Public&Private	Public&Private	Public&Private	Public&Private
	Target	Target	Target	Target
	IIS=0	IIS>0	IIS=0	IIS>0
VARIABLES	True	True	True	True
$\text{Log}(1+\text{Export Product})_t$	0.010** (0.005)	0.017*** (0.006)		
$\text{Log}(1+\text{Export Product})_{t-1}$			0.015*** (0.005)	0.019*** (0.007)

Backup: Withdrawn Deals as Counterfactuals

- **Alternative counterfactual:** 44 withdrawn IRMs matched to completed deals.
- Acquirers in **completed deals** add more new suppliers than acquirers in withdrawn deals.
- Effect is **stronger for completed deals with higher IIS.**

Granular analysis with withdrawn deals:

	Buy	BuyNew	BuyExisting
<i>Post</i> × <i>True</i>	0.054*** (0.015)	0.036*** (0.012)	0.026** (0.011)
Obs.	5,157	5,157	5,157

Coefficients comparable to main analysis. Deal completion (not just intent) drives supplier-network expansion.

Backup: Acquirers Drop Existing Suppliers

DV: Buy from existing supplier	(1) Buy	(2) Buy
<i>Post</i> × <i>True</i> × <i>IIS</i>		-0.035** (0.014)
<i>Post</i> × <i>True</i>	-0.010*** (0.002)	-0.006*** (0.002)
<i>Post</i>	-0.098*** (0.002)	-0.096*** (0.002)
Cohort-Acquirer-Supplier FE	Yes	Yes
Year FE	Yes	Yes
Obs.	685,469	685,469

Acquirers are **less likely** to continue with existing suppliers. Effect **stronger when IIS is higher**
 → active supply-chain **restructuring**.

Backup: Full Granular Results by Relationship Duration and IIS

- Effects strongest for long-standing relationships.
- Effects stronger for IIS > 0 deals.

VARIABLES	(1) Buy	(2) BuyNew	(3) BuyExisting
<i>Post</i> × <i>True</i>	0.042*** (0.005)	0.025*** (0.003)	0.024*** (0.004)
Control Variables	Yes	Yes	Yes
Acquirer×Target's Supplier×Deal Cohort FE	Yes	Yes	Yes
Cohort×Year FE	Yes	Yes	Yes
SE Clustered (Acquirer×Target's Supplier)	Yes	Yes	Yes
Observations	127,798	127,366	127,798
R-squared	0.513	0.365	0.526

VARIABLES	(1) Duration>=3 Years Buy	(2) Duration<3 Years Buy	(3) Duration>=3 Years BuyNew	(4) Duration<3 Years BuyNew	(5) Duration>=3 Years BuyExisting	(6) Duration<3 Years BuyExisting
	<i>Post</i> × <i>True</i>	0.077*** (0.011)	0.030*** (0.005)	0.035*** (0.006)	0.021*** (0.003)	0.050*** (0.010)
Difference		0.047***		0.014*		0.035***
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects and Clusters	Yes	Yes	Yes	Yes	Yes	Yes
Observations	34,167	93,442	34,116	93,059	34,358	93,463
R-squared	0.573	0.490	0.402	0.362	0.509	0.446

VARIABLES	(1) Buy IIS>0	(1) Buy IIS=0	(2) BuyNew IIS>0	(2) BuyNew IIS=0	(3) BuyExisting IIS>0	(3) BuyExisting IIS=0
<i>Post</i> × <i>True</i>	0.052*** (0.007)	0.028*** (0.005)	0.033*** (0.005)	0.013*** (0.004)	0.033*** (0.006)	0.012*** (0.003)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects and Clusters	Yes	Yes	Yes	Yes	Yes	Yes
Observations	66,102	61,061	66,102	61,061	66,102	61,061
R-squared	0.517	0.555	0.385	0.382	0.522	0.592

Backup: Target Performance Post-Merger

VARIABLES	(1) [T-3, T+3] Target Tobin Q	(2) [T-3, T+3] Target LogSale	(3) [T-5, T+5] Target ROA	(4) [T-5, T+5] Target Profit Margin
<i>RivalPurchaseVol</i> × <i>Post</i>	0.521*** (0.067)	0.058* (0.032)	-0.007 (0.012)	-0.011 (0.023)
<i>Post</i>	-0.080 (0.115)	-0.014 (0.054)	0.003 (0.025)	-0.039 (0.071)
<i>RivalPurchaseVol</i>	-1.647 (3.723)	-2.701 (1.667)	-0.549 (1.222)	-2.586 (2.016)
Target Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
SE Clustered (Target Firm)	Yes	Yes	Yes	Yes
Observations	267	267	267	262
R-squared	0.803	0.960	0.544	0.626

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Backup: Post-Merger New Suppliers — Full Results

VARIABLES	(1) Num New Supplier	(2) Num New Country
<i>True</i>	8.588*** (1.335)	0.647*** (0.111)
Control Variables	Yes	Yes
Cohort FE	Yes	Yes
SE Clustered (Cohort)	Yes	Yes
Observations	2,097	2,097
R-squared	0.447	0.379

Panel A: Full restricted sample.

VARIABLES	(1) IIS>0 Num New Supplier	(2) IIS=0 Num New Supplier	(3) IIS>0 Num New Country	(4) IIS=0 Num New Country
<i>True</i>	9.188*** (2.497)	5.821*** (1.607)	0.544*** (0.188)	0.783*** (0.159)
Difference	3.367**		-0.239	
Control Variables	Yes	Yes	Yes	Yes
Deal-cohort FE	Yes	Yes	Yes	Yes
Cluster at Deal-cohort Level	Yes	Yes	Yes	Yes
Observations	627	1,351	627	1,351
R-squared	0.543	0.385	0.453	0.405

Panel B: By IIS subgroup.

Backup: Post-Merger Export Activity Interaction

- Do IRMs enable firms to add suppliers **faster** when they face export expansion shocks?

DV: Num New Supplier	(1)	(2)	(3)
$True \times \ln(1 + ExportVol)$	5.419*** (1.794)		
$True \times \ln(1 + ExportCountry)$		1.670** (0.701)	
$True \times \ln(1 + ExportProduct)$			3.339** (1.311)
$True$	5.624***	5.865***	5.815***
Cohort FE	Yes	Yes	Yes
Obs.	2,097	2,097	2,097

IRMs enable firms facing export expansion shocks to add international suppliers **more quickly**.

Backup: Variable Definitions

Variable	Definition
<i>IIS</i>	Cosine similarity of imported input vectors (HS6 volumes)
<i>Supplier Similarity</i>	Cosine similarity of supplier identity vectors
<i>Product Similarity</i>	Hoberg-Phillips TNIC3 product similarity score
<i>Industry IIS</i>	Avg. similarity between target's import vector and acquirer's TNIC3 peers
<i>China IIS</i>	Cosine similarity: acquirer's China inputs vs. target's non-China inputs
<i>SC Risk</i>	Firm-level supply chain risk from earnings calls (Ersahin et al., 2024)
<i>Economy SC Risk</i>	Annual average of firm-level SC risk
<i>Trade Policy Uncertainty</i>	Index from Caldara et al. (2020)
<i>HasSCMove</i>	=1 if acquirer hired target's SC employee in 3 years pre-deal
<i>Log(1+Num DA)</i>	Log of 1 + number of data analysts at acquirer
<i>SC_Role</i>	=1 if employee's job is supply-chain related
<i>Buy / BuyNew / BuyExisting</i>	=1 if acquirer imports from target's supplier (all / new / existing inputs)
<i>RivalPurchaseVol</i>	Volume of target rivals' purchases from acquirer's suppliers
<i>NumRivalPurchase</i>	Number of target rivals importing from acquirer's suppliers
<i>HighExp</i>	=1 if acquirer's supplier relationships ≥ 3 years