Buying Brains with M&A: Talent Reallocation, Firm Boundaries and Competition*

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Abstract

This paper studies how mergers and acquisitions affect talent reallocation, firm boundaries and competition. Using matched firm-worker data from LinkedIn and antitrust-screened M&A events in the US, we show that successful M&A reallocate high-skilled and managerial talent from targets, disproportionately filling acquirers' specific occupational gaps. While both talent and non-talent deals expand scale and market shares, only talent-acquiring deals expand firm scope through new products. We develop an equilibrium model in which multi-market firms compete in product and labor markets and choose among poaching, talent acquisitions, and non-talent acquisitions. We calibrate the model and show that talent acquisitions generate the highest wages, employment, and total surplus among these alternatives, whereas non-talent acquisitions yield the highest private payoff to the acquirer and the lowest consumer surplus. Our model highlights how access to skilled labor and product-market competition jointly shape acquisition incentives and the distribution of merger gains across consumers, workers, and firms.

JEL Codes: G34, J42, L13, L41, J31.

Keywords: mergers and acquisitions; talent acquisition; firm boundaries; product-market competition.

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1 Introduction

Firms compete both for customers in product markets and for workers in labor markets (Deb et al., 2024). Mergers and acquisitions connect these two markets by changing both a firm's access to workers and the product markets in which those workers can be employed. A firm may acquire a target to obtain skilled workers who support development of new products and entry into new markets, or to strengthen market position by absorbing a competitor. The consequences depend on how these changes interact: access to skilled workers shapes the firm's ability to expand, while product-market competition determines the returns to expansion and the resulting demand for labor, with different implications for consumers, workers, and firms. How does M&A reshape firms' decisions in talent reallocation and boundary expansion, and how does the interaction between labor market hiring and product market competition determine the welfare consequences of M&A?

Abbott Laboratories' $25 billion acquisition of St.Jude Medical in 2017 illustrates how M&A broadened Abbott's market access through both the talents and the products.[1] Before the transaction, Abbott's heart-device business was concentrated in a relatively narrow set of products, mainly stents and one type of heart-valve repair device. The acquisition added products across several other categories of heart and nerve-stimulation devices, giving Abbott access to new hospital customer segments and a much wider range of device markets. After acquisition, Abbott could offer hospitals and physicians a more complete set of cardiovascular and nerve-stimulation products, expanding its sales in the cardiovascular segment from $2.9bn in 2016 to $8.9bn in 2017 and $9.4bn in 2018. The integration of roughly 3,200 of St. Jude's 18,000 employees—about 8.2% of Abbott' new hires that year, mainly in technology, IT, and manufacturing—supported the transfer of these products into Abbott's operations and scale.

Two empirical challenges arise in answering these questions. First, it is hard to observe how workers move between targets and acquirers around a deal, because standard U.S. matched employer–employee database lacks information on occupations and job roles. Although the target's financial statements are immediately consolidated into the acquirer's post-merger, the target typically persists as a distinct subsidiary or operational entity. Second, M&A deals differ along many unobservable dimensions—acquirer and target characteristics that jointly determine both the decision to merge and post-merger outcomes—making it difficult to estimate the impact of M&A. We address the first challenge by linking M&A deals to Revelio Labs data which tracks the distinct employment records of both entities, allowing us to observe the exact occupation-level transition of workers from the target to the acquirer even as their financials

[1] While St.Jude was financially consolidated into Abbott's balance sheet post-acquisition, it continued to operate as a distinct entity in employment records.

become one. We address the second challenge by restricting the analysis to deals that are comparable in sizes and FTC regulatory stringency, and using parallel trends with stringent fixed effects to mitigate selection bias and other confounding shocks.

We also develop an equilibrium model of multi-market firms competing in product markets and hiring skilled labor. The model connects these patterns to firms' incentives to obtain skilled labor and reshape product market competition, and traces their consequences for wages, employment, consumer surplus, and profits. The model shows why the interaction matters for M&A evaluation: overlooking access to talent can understate the gains from efficient labor reallocation and expansion into new markets, while overlooking changes in product-market competition can overstate the social benefits of a deal.

Our paper begins by studying worker reallocation from targets to acquirers. Using a difference-in-differences design, we compare acquirers' target inflow share for successful versus failed deals. Successful deals raise the target inflow share by about 10.5 percentage points, while total net inflows do not change significantly. M&A therefore substitutes for, rather than adds to, external hiring. Event-study estimates show little movement before completion and a sharp increase after the deal. These results are robust to restricting the sample to deals of comparable size and to those that underwent regulatory review. The flows are disproportionately managerial, tech & IT and high-skill workers, and acquirers use M&A to fill occupational gaps in their workforce. These patterns point to a change in the composition and origin of hires.

We next examine how M&A reshapes acquiring firms' boundaries and market shares. Using a stacked difference-in-differences design, we compare talent-acquiring deals, non-talent deals, failed deals, and firms with no M&A. Successful deals increase sales, costs, business-segment entry, and sales and employment market shares. New-product introduction, however, rises significantly only in talent-acquiring deals. Relative to non-talent deals, talent deals lead to larger increases in sales and costs of goods sold, a higher probability of new products and new segments, and greater gains in sales and employment market shares. These results establish a scale-versus-scope pattern: non-talent deals mainly expand scale and product-market power; talent deals expand scope.

Motivated by these facts, we develop a tractable equilibrium model of multi-market competition with skilled labor.[2] A potential acquirer chooses among remaining at the status quo, poaching workers to enter a new market, or acquiring a target. Product markets are linked through a general linear demand system, firms compete à la Cournot, and skilled labor has

[2]The model abstracts from occupational composition, and "talent" is a reduced-form for worker quality/composition rather than an organization-level production technology. It also abstracts from explicit worker flows; employment is an equilibrium outcome. This keeps the model tractable while allowing it to speak to the composition facts.

upward-sloping supply. Poaching requires costly external recruitment. Acquisition transfers the target's workforce and market footprint to the acquirer. The transaction has two joint consequences: it changes the product-market portfolio and makes it easier for acquirers to obtain high-skilled workers. Which type of acquisition is chosen depends on the relative strength of product-market and labor-market forces. Talent acquisition is more attractive when the target brings new markets and complementary high-skilled workers. Non-talent acquisition is more attractive when demand is high, and the target overlaps with the acquirer, so eliminating a rival raises market shares.

We calibrate the model and compare results among different actions. Talent acquisitions have the highest wage, employment, and labor share, while non-talent acquisitions have the highest markup and the lowest consumer surplus. Talent acquisitions facilitate access to skilled labor and expansion into new markets; the welfare analysis evaluates whether these gains outweigh the accompanying changes in competition. Non-talent acquisitions have the highest private payoff to the acquire but a lower total surplus compared to the other actions. Talent acquisitions have a lower private payoff but the highest total surplus among the three acquisition/poaching alternatives. Thus different actions lead to distributional effect on welfare. Because firms choose on private payoffs while welfare includes consumer and worker surplus, private and social planner's rankings of M&A types can diverge. A two-market welfare analysis shows that different deals affect consumers, workers, and firms differently.

The broader implication is that an M&A evaluation should not treat labor merely as an input whose total quantity rises or falls after a transaction. An M&A deal can raise efficiency by moving complementary talent to a firm that can deploy it across new products and markets, but it can also alter equilibrium labor demand and wages. Therefore, evaluating M&A exclusively through contemporaneous prices or conventional concentration measures may miss an essential part of what firms acquire.

Our paper contributes to three strands of literature. First, it speaks to research on human capital as a motive for merges and acquisitions. Chen et al. (2021) show that acquisitions can overcome labor-market frictions, retain valuable target personnel, and improve post-acquisition performance. Lee et al. (2018) establish that human-capital relatedness predicts merger activity, while Tate and Yang (2024) show that transferable skills facilitate diversifying acquisitions, worker retention, and productivity gains. Related work demonstrates the importance of key individuals for firm outcomes (Ewens and Marx, 2018). These papers establish that workers and human capital are central to acquisition motives. We contribute evidence on how acquisitions change the source and occupational composition of acquirers' hiring. Talent M&A increases the share of incoming workers drawn from the target without a statistically significant change in total net worker inflows. These flows are concentrated among managerial, senior, and tech-

nology workers and in occupations in which the acquirer is relatively underrepresented. Our findings thus identify changes in workforce composition that measures of aggregate employment or worker retention alone may miss, and are consistent with acquisitions providing access to complementary skills.

Second, our paper contributes to the literature that examines acquisitions as a mechanism for reallocating assets and generating efficiency gains (Maksimovic and Phillips, 2001; Braguinsky et al., 2015; David, 2021), alongside the financial forces shaping merger activity and shareholder returns (Andrade et al., 2001; Rhodes-Kropf and Viswanathan, 2004; Rhodes-Kropf et al., 2005; Harford, 2005; Moeller et al., 2005; Betton et al., 2008). Related work links acquisitions to product-market complementarities, differentiation, and scope expansion (Hoberg and Phillips, 2010, 2016, 2025), while showing that mergers can either promote innovation through complementary assets or suppress overlapping projects (Bena and Li, 2014; Cunningham et al., 2021). The antitrust literature further emphasizes how mergers affect prices and competition through concentration and competitive proximity (Ashenfelter et al., 2014; Nocke and Whinston, 2022). We connect this literature to post-acquisition worker reallocation by documenting differences in firm expansion across acquisition types. Talent acquisitions are associated with larger increases in new-product introduction and business-segment entry, whereas non-talent acquisitions primarily expand scale. Our model provides a mechanism linking these patterns: access to complementary skilled workers supports expansion into new markets, while acquisitions involving product-market overlap can strengthen market position. This distinction helps explain why increases in acquirer sales and market shares can have different implications for competition and welfare.

Third, our paper contributes to the equilibrium analysis of merger decisions and welfare. Research on labor-market power examines firms' influence on wages and employment(Prager and Schmitt, 2021; He and Xue, 2025). Montag (2026) develops a structural framework in which merger policy involves a trade-off between consumer welfare and domestic employment. Our model instead focuses on how product market and labor market jointly shape merger decisions and the distributional effect on welfare across different choices. The model decomposes firms' gains into product-market concentration, recruiting/entry frictions, and talent complementarity, and delivers a comparative statics map in demand, product substitutability, entry costs, and labor supply elasticity. The calibration shows that the private and social rankings of these alternatives can diverge: non-talent acquisitions yield the highest private payoff to the acquirer, whereas talent acquisitions generate the highest total surplus among the acquisition and poaching alternatives. Our contribution is to connect the incentives underlying acquisition choices to their consequences for consumers, workers, and firms, accounting for the interaction between product and labor markets.

The remainder of the paper proceeds as follows. Section 2 describes the data used in the paper. Section 3 presents the main empirical analysis. Section 4 develops the model of multi-market competition, scarce talent, and endogenous choice between external poaching and acquisition. Section 5 and Section 6 characterize equilibrium output, wages, markups, and welfare, and distinguishes non-talent acquisitions from talent-acquiring acquisitions. Section 7 calibrates the model to the empirical setting and quantifies the implications of alternative merger regimes for worker flows, wages, markups, consumer surplus, firm profits, and total welfare. Section 8 concludes.

2 Data and Measures

Our workforce data comes from Revelio Labs which collects individual data from LinkedIn profiles. Revelio Labs provides employment records which allow us to see current and historical workforce composition and trends of companies. We download employment history and biography of each individual including their positions, job descriptions, predicted salaries, seniority, and education. For occupation classifications, we link each occupation to O*NET job descriptions to create six general occupation groups: technology & IT, sales & marketing, data, manufacturing, R&D, and others. Detailed classification is described in Table A1 and the distribution of occupations is shown in Table A2. For seniority of each individual, we simplify seven seniority levels of each individual into four, including (i) managing department, (ii) middle manager, (iii) supervisor, and (iv) entry & junior, as shown in Table A3. While M&A transactions consolidate the target's financial statements into the acquirer's (as reflected in Compustat), the target does not instantly disappear as an operational entity in employment records. In Revelio Labs, the target and acquirer remain distinct identifiers even after the deal (often representing a parent-subsidiary relationship). We exploit this distinct feature to track the exact flow of human capital: we can observe whether a specific worker moves from the target to the acquirer, rather than being forced to treat them as a single consolidated entity.

Revelio Labs data, derived from LinkedIn profiles, offers granular worker-firm matches ideal for tracking post-M&A flows by occupation and seniority, with prior studies confirming its representativeness for public firms (coverage $\sim$ 77-90% for skilled workers). To verify the reliability of our workforce data from Revelio Labs, we compare the employment and wage data with (i) aggregate data from Current Employment Statistics (CES) published by the Bureau of Labor Statistics, and (ii) firm-year level data from Compustat US.[3] At the aggregate level, Revelio Labs correlates 0.89 with and accounts for $\sim$ 12.5%-25.9% of total nonfarm employees from CES. The average worker compensation from Revelio Labs correlates 0.98 with and has a

[3]Note Compustat's wage bill underreporting due to exclusion of non-production staff.

ratio of $\sim$ 1.47-2.17 times the average annual earnings of all employees from CES.[4] Firm-year employment from Revelio correlates 0.63 with Compustat (median coverage ratio rising from 43.4% in 2000 to 89.7% in 2023), while total compensations correlates 0.70 with a median ratio of $\sim$ 0.47-0.8, consistent with prior validations.

We measure product scope using the text-based metric from Hoberg and Phillips (2025), which tracks the number of distinct product markets (out of 300 spatial industry clusters) in which a firm operates.[5] To capture new product development around M&A, we define a new product dummy that equals one if the merged firm operates in industry clusters that neither the acquirer nor the target occupied in the pre-M&A year, and 0 otherwise. Similarly, using Compustat Segments data, we define a new segment dummy that equals one if the merged firm reports business segments absent from both the acquirer and the target in the pre-M&A year, and zero otherwise.

We download all the M&A deals between 2001-2021 from the LSEG SDC Platinum database. We focus on the deals in which both acquirer and target are US public companies. For regulatory oversights exposed by M&A deals, we manually collect annual minimum dollar jurisdictional thresholds that determine reportability under the Hart-Scott-Rodino (HSR) Act,[6] and antitrust cases filed by the FTC. Financial variables come from Compustat, and all monetary variables are deflated by annual CPI (2015 = 100). Summary statistics of acquirer-target-year flows and firm-year level outcomes are shown in Table A4.

3 Empirical Analysis

In this section, we present two sets of empirical results. We first examine whether successful M&A reallocates talent from targets to acquirers, the composition of talent inflows and how target-firm employment responds. We then ask whether M&A expands acquirers' firm boundaries and market shares, and whether these effects are stronger for deals accompanied by target-to-acquirer talent flows.

[4] Average annual earnings are calculated as 52×weekly annual earnings of all employees from CES (series CES0500000011).

[5] Hoberg and Phillips (2025) exclude firms operating in financial industries and regulated utilities (SIC 6000–6999 and 4900–4949, respectively).

[6] Under the HSR Act, transactions must be reported to the Federal Trade Commission and Department of Justice before closing if they meet both a "size of transaction" test and a "size of person" test. Taking 2022 as an example, the HSR Act's "size of transaction" test is met when the acquiring person will hold voting securities, assets, or non-corporate interests valued in excess of $101 million as result of the transaction. If the transaction value exceeds $101 million but not $403.9 million, the "size of persons" test must also be satisfied, requiring that one party has total assets or annual net sales of at least $202 million and the other has at least $20.2 million. Transactions valued above $403.9 million require an HSR filing regardless of the size of the persons involved. These thresholds are revised annually based on changes in GDP.

3.1 Talent Flows

We begin by studying how M&A affects labor flows between targets and acquirers. We construct acquirer-target-year level labor flow measures and compare acquirer's inflow share from target around successful and failed deals. Our main specification is:

$$\text{Inflow}_{i,j,t} = \alpha + \beta_1 \,\text{SuccessMA}_{i,j} + \beta_2 \,\text{Post}_{i,j,t} + \beta_3 \,\text{SuccessMA}_{i,j} \times \text{Post}_{i,j,t} + \theta X_{i,t-1} + \eta + \epsilon_{i,j,t}, \quad (1)$$

where $\text{Inflow}_{i,j,t}$ denotes acquirer i's inflow share from target j in year t. The variable $\text{SuccessMA}_{i,j}$ is a dummy equal to one if the M&A between i and j is completed and zero if the deal fails. $\text{Post}_{i,j,t}$ is a dummy equal to one for years on or after the M&A effective year and zero before. $X_{i,t-1}$ includes lagged log employment of the acquirer, and η denotes the set of fixed effects we include sequentially (firm, year, industry×year, and state×year). Standard errors are clustered at the acquiring-firm level. The sample is restricted to M&A deals between U.S. public firms, within a window of three years before and after the effective year.

Panel A of Table 1 reports the effect of M&A on acquirers' total inflows and target inflow shares. Columns (1)-(3) show the results in net total inflow ratio to the acquirers, and Columns (4)-(6) focus on inflow shares specifically from targets to acquirers. Successful M&A raises the target share of acquirer hires by about 10.5 percentage points, while the total net inflow ratio does not change significantly. The increase is therefore not broad-based hiring: it is a reallocation of hires from the target to the acquirer. The event study shows that the effect occurs around deal completion, with no significant pre-trend. These findings establish that M&A changes the composition and origin of hires, not just total hiring.

Our results face several identification challenges. First, industry- or state-level policy changes or shocks could drive the findings. Second, acquirers may strategically pursue targets from which they already poach employees. Third, deal success is endogenous to unobservable characteristics of acquirers and targets. We address these concerns as follows. We include industry-year and state-year fixed effects, to absorb industry- and state-level shocks. In Figure 1, we replace the $\text{Post}_{i,j,t}$ dummy with year dummies around the deal and plot the interacted coefficients with 95% confidence intervals. The event study shows that talent inflows occur primarily within one year after completion, with no significant pre-trends. Finally, we restrict the sample to more comparable deals by focusing on transactions above the HSR filing threshold and those that entered antitrust review. In this subsample, both treated and control deals are larger, face more comparable regulatory scrutiny, and have more similar completion rates. The estimated coefficients, reported in Panel B of Table 1, remain statistically significant and similar in magnitude to those in Panel A. These findings confirm that M&A serves as an effective channel for acquiring specific talent from targets but does not substantially alter firms' ability to attract

workers from the broader labor market.

Table 1: Talent Inflow to Acquiring Firms

Panel A: Full Sample

	Net Inflow Ratio (× 100)			Share of Inflow from Target Firms (× 100)		
	(1)	(2)	(3)	(4)	(5)	(6)
Success M&A	0.002	0.002	0.003	1.365	0.645	1.508
	(0.003)	(0.003)	(0.003)	(1.122)	(2.018)	(3.165)
Post = 1	0.007**	0.007**	0.008**	-0.919	-1.850	-3.504
	(0.003)	(0.003)	(0.004)	(1.157)	(2.039)	(2.492)
Success M&A × Post = 1	-0.001	-0.003	-0.003	7.110***	8.886***	10.476***
	(0.003)	(0.003)	(0.004)	(1.310)	(2.746)	(3.168)
Ln (Employment)	-0.061***	-0.068***	-0.073***	-1.748	-0.449	-2.765
	(0.011)	(0.007)	(0.007)	(3.259)	(2.451)	(3.909)
R-squared	0.641	0.687	0.728	0.103	0.148	0.181
No. obs	16,130	15,840	13,707	16,130	15,840	13,707
Acquiring Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	No	No	Yes	No	No
Industry × Year FE	No	Yes	Yes	No	Yes	Yes
State × Year FE	No	No	Yes	No	No	Yes

Panel B: Deals Subject to Antitrust Oversights

	Share of Inflow from Target Firms (× 100)		
	Above HSR Thresholds	Second Request by FTC/DOJ	Antitrust Cases
	(1)	(2)	(3)
Success M&A × Post = 1	8.110***	9.919***	11.834**
	(1.848)	(3.659)	(5.640)
R-squared	0.100	0.124	0.415
No. obs	12,927	4,216	185
Other Controls & FEs	Yes	Yes	Yes

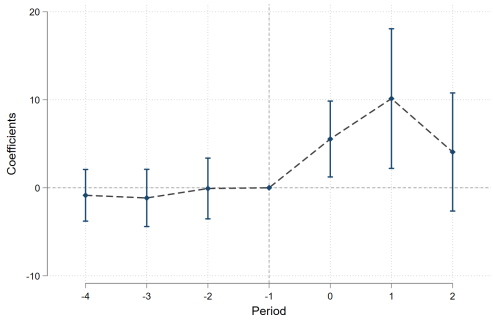
Notes: This table reports estimated coefficients and standard errors of talent inflows into acquiring firms, as estimated by Equation 1. Panel A reports the estimation results of acquirer's total inflow ratio and target inflow share in the full sample, and Panel B reports the estimation results of acquirer's target inflow share for M&A deals subject to antitrust oversights. The inflow ratio is computed as number of new entry of employees from target divided by employment of acquirer, and the share of target inflow is the ratio of target inflow over total inflow into the acquirer. The dummy of success M&A is equal to one if the M&A is successful, and zero if the M&A fails. The Post dummy is equal to one for two years after (including) M&A effective year, and zero for three years before M&A effective year. We control lagged ln (employment) and include acquiring firm fixed effects in all the specifications, and gradually add year, acquirers' industry×year and acquirers' state×year fixed effects. To account for multiple observations within the same acquirer-target-year, we weight each observation by the inverse of the group size. Standard errors are clustered at acquiring firm level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

3.2 Which Talents do Firms Acqui-hire?

Our data as detailed information on occupations and seniority of talents, which allows us to explore (i) which types of talent firms seek through acqui-hiring, and (ii) whether firms acqui-hire they talents they are short of. First, we find that target-to-acquirer flows are not a representative subsample of the target workforce. Although the inflow shares are comparable across different occupations, they are disproportionately higher for managerial positions,[7] as shown in Table 2.

[7]This is a compositional fact about human capital, not a statement about teams or organization.

Figure 1: Share of Inflow from Target to Acquirer − Event Study around M&A



Notes: This figure plots coefficients and depicts 95% confidence intervals of talent inflow shares from target firms to acquiring firms before and after M&A deals, as estimated by Equation 1. The dependent variable is share of inflow from M&A target firms among all inflow to the acquirer. The dummy of success M&A is equal to one if the M&A is successful, and zero if the M&A fails. We interact the success M&A dummy and time dummies, and plot the coefficients of the treatment effects over time. We control lagged ln (employment) and include acquiring firm fixed effects, industry×year and state×year fixed effects. To account for multiple observations within the same acquirer-target-year, we weight each observation by the inverse of the group size. Standard errors are clustered at acquiring firm level.

Table 2: Inflow from Targets after Successful M&A − By Occupation or Seniority

Panel A: By Occupation

	Share of Inflow from Target Firms (× 100)					
	Tech & IT	Sales & Mkting	Data	Manufac.	R&D	Other
	(1)	(2)	(3)	(4)	(5)	(6)
Success M&A × Post = 1	4.365***	4.845***	4.844***	4.774***	3.077***	5.516***
	(0.856)	(1.151)	(0.893)	(1.332)	(0.558)	(1.525)
R-squared	0.420	0.362	0.443	0.320	0.406	0.177
No. obs	10,029	12,195	11,366	9,555	8,536	12,747
Other Controls & FEs	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: By Seniority

	Share of Inflow from Target Firms (× 100)			
	Entry & Junior	Supervisor	Middle Manager	Managing Dep
	(1)	(2)	(3)	(4)
Success M&A × Post = 1	2.206***	6.456***	11.959***	11.106***
	(0.383)	(1.623)	(1.900)	(2.426)
R-squared	0.412	0.302	0.442	0.479
No. obs	13,120	12,192	10,832	9,309
Other Controls & FEs	Yes	Yes	Yes	Yes

Notes: This table reports estimated coefficients and standard errors of target inflow share by occupation, as estimated by Equation 1. From column (1) to (6), the dependent variable is acquirer's target inflow share by occupation, computed as target inflow over total inflow by occupation. The dummy of success M&A is equal to one if the M&A is successful, and zero if the M&A fails. The Post dummy is equal to one for two years after (including) M&A effective year, and zero for three years before M&A effective year. We show the results of the full sample in Panel A, M&A deals after 2012 in Panel B, and M&A deals after 2018 in Panel C. We control lagged ln (employment) and include acquiring firm fixed effects, acquirers' industry×year, and acquirers' state×year fixed effects in all the specifications. To account for multiple observations within the same acquirer-target-year, we weight each observation by the inverse of the group size. Standard errors are clustered at acquiring firm level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Second, we study whether acquirers strategically bridge their talent gaps with M&A, that is, they obtain talent that is relatively scarce within their own workforce compared to the target's. We define the talent difference in share of occupation o between the acquirer i and target j in the pre-M&A year as:

$$\text{Gap}_{i,j,o} = \text{Share}_{i,o} - \text{Share}_{j,o}.$$

We group all detailed occupations into five broad categories (tech & IT, sales & marketing, data, manufacturing, and R&D). For each deal, we identify the occupation that yields the maximum positive gap between the acquirer and target, and assign the deal to its corresponding occupational category. This defines a categorical variable, $\text{AdvGroup}_{i,j} \in \{1, 2, 3, 4, 5\}$. Symmetrically, we define $\text{DefGroup}_{i,j} \in \{1, 2, 3, 4, 5\}$ by assigning the deal to the category of the occupation that yields the maximum negative gap (talent deficit). Intuitively, $\text{AdvGroup}_{i,j}$ indicates the occupation where the acquirer is already well-endowed, whereas $\text{DefGroup}_{i,j} \in \{1, 2, 3, 4, 5\}$ indicates the acquirer's occupational bottleneck that the target can potentially fill.

To understand the strategic nature of talent flows, we partition all M&A deals into five categories based on $\text{AdvGroup}_{i,j}$ (and separately for $\text{DefGroup}_{i,j}$). We then examine the target-to-acquirer inflows across these same five occupations, yielding two 5×5 regression matrices. By examining the coefficients along the main diagonals versus the off-diagonals, this design reveals whether talent flows in M&A are targeted at specific human capital needs or reflect a general workforce transfer. Table 3 reveals a highly targeted talent acquisition strategy. In Panel A (the Advantage matrix), diagonal effects are largely muted while off-diagonal inflows dominate, indicating that acquirers seek complementary skills rather than absorbing redundant talent. Conversely, in Panel B (the Deficit matrix), talent inflows are heavily concentrated along the main diagonal, confirming that acquirers specifically source the human capital they lack. These results establish M&A as a highly targeted gap-filling mechanism rather than a general labor transfer.

Together, these results show that M&A changes the composition and origin of hires. Target-to-acquirer flows are disproportionately managerial, tech & IT, and high-skill workers, and acquirers use M&A to fill occupational gaps in their workforce.

3.3 The Impact on Talents of Target Firms

When acquirers obtain a non-trivial share of talent from targets, a natural question arises: how do target firms respond? Do they merely experience employment shrinkage, or attempt to recover from the talent loss? Understanding the impact of M&A on target firms is crucial for examining labor market competition dynamics. To answer this, we estimate Equation 1 for target firms by replacing the dependent variables, controls, and fixed effects with those

Table 3: Do Acquirers Bridge Talent Gaps through M&A?

Panel A: Deals Classified by Acquirer's Relative Advantage (AdvGroup)

Acquirer's Advantageous Occupation Group	Share of Inflow from Target Firms (× 100)				
	Tech & IT	Sales & Mkting	Data	Manufac.	R&D
Tech & IT	6.101***	3.155	4.557*	6.362***	3.022***
	(2.032)	(3.508)	(2.500)	(2.063)	(1.089)
Sales & Mkting	6.271***	5.676***	8.052***	14.781	4.600***
	(1.461)	(0.955)	(1.691)	(11.580)	(0.979)
Data	5.000***	11.380***	6.433***	3.716	3.336***
	(1.318)	(2.756)	(1.110)	(2.369)	(0.845)
Manufac.	7.269***	5.664***	7.508**	6.340***	5.460***
	(2.799)	(1.752)	(2.971)	(1.745)	(1.993)
R&D	9.482***	10.071***	0.669	9.915***	3.016**
	(2.574)	(2.377)	(2.739)	(3.496)	(1.159)

Panel B: Deals Classified by Acquirer's Relative Deficit (DefGroup)

Acquirer's Deficit Occupation Group	Share of Inflow from Target Firms (× 100)				
	Tech & IT	Sales & Mkting	Data	Manufac.	R&D
Tech & IT	9.218***	8.714***	10.689**	8.833***	3.496***
	(2.109)	(1.917)	(4.205)	(2.093)	(0.677)
Sales & Mkting	5.541***	7.698***	4.925***	5.836***	3.130***
	(1.825)	(1.417)	(1.010)	(2.000)	(1.011)
Data	7.578***	4.955	9.254***	0.704	3.857***
	(1.664)	(3.078)	(2.955)	(4.086)	(1.203)
Manufac.	6.995***	6.828***	11.203***	36.173	6.668**
	(2.598)	(2.216)	(3.978)	(30.918)	(2.937)
R&D	6.087***	9.944*	3.322***	3.604**	4.607***
	(2.220)	(5.462)	(0.747)	(1.577)	(1.033)

Notes: This table reports the estimated coefficients and standard errors of the 5×5 regression matrices examining talent flows from targets to acquirers, estimated by Equation 1. Panel A partitions deals based on the occupation group where the acquirer has the largest relative advantage over the target ($\text{AdvGroup}_{i,j}$). Panel B partitions deals based on the largest relative deficit ($\text{DefGroup}_{i,j}$). The dependent variable in each cell is the share talent inflows from the target in that specific occupation group. In all the regressions, we control lagged ln (employment) and include acquiring firm and year fixed effects. To account for multiple observations within the same acquirer-target-year, we weight each observation by the inverse of the group size. Standard errors are clustered at acquiring firm level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

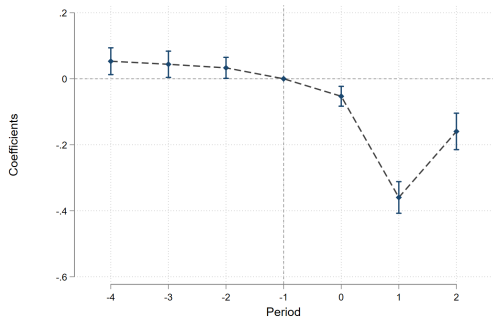
corresponding to target firms. Table 4 reports the estimation results. We find that target firms experience a significant drop in both net talent inflows and overall employment, indicating a shrinkage in their talent stock post-M&A. To capture the temporal dynamics, we plot the event study coefficients in Figure 2. The parallel pre-trends confirm that this talent loss is driven by the M&A. Furthermore, the rebounding coefficients indicate that target firms begin to compensate for their talent loss starting from the second year after the deal. The target employment decline is consistent with workers moving toward the acquirer.

Table 4: Target Firms after M&A

	Net Inflow Ratio (× 100) (1)	Ln (Employment) (2)
Success M&A × Post = 1	-0.347***	-0.194***
	(0.047)	(0.021)
R-squared	0.318	0.990
No. obs	9,493	9,493
Other Controls & FEs	Yes	Yes

Notes: This table reports estimated coefficients and standard errors of the effects of M&A on inflow ratio and employment of target firms, as estimated by Equation 1. The inflow ratio is computed as number of new entry of employees from target divided by employment of target. The dummy of success M&A is equal to one if the M&A is successful, and zero if the M&A fails. The Post dummy is equal to one for two years after (including) M&A effective year, and zero for three years before M&A effective year. We control lagged ln (employment) and include target firm fixed effects in all the specifications, and gradually add year, acquirers' industry×year and acquirers' state×year fixed effects. To account for multiple observations within the same acquirer-target-year, we weight each observation by the inverse of the group size. Standard errors are clustered at target firm level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Figure 2: Employment of Target Firms − Event Study around M&A



Notes: This figure plots coefficients and depicts 95% confidence intervals of employment of target firms before and after M&A deals, as estimated by Equation 1. The dependent variable is ln (employment) of target firms. The dummy of success M&A is equal to one if the M&A is successful, and zero if the M&A fails. We interact the success M&A dummy and time dummies, and plot the coefficients of the treatment effects over time. We control lagged ln (employment) and include target firm fixed effects, industry×year and state×year fixed effects. To account for multiple observations within the same acquirer-target-year, we weight each observation by the inverse of the group size. Standard errors are clustered at target firm level.

3.4 Firm Boundaries and Market Shares

We next study how M&A affects acquiring firm boundaries in both scale and scope, and market concentration in both product and labor markets. Our identification strategy exploits the fact that, following an M&A, some deals are accompanied by substantial labor flows from the target to the acquirer while others are not. We interpret the presence of such flows as revealing acqui-hiring motives: mergers with strong target-to-acquirer labor flows are more likely driven by the desire to acquire specific teams or talent. Comparing outcomes across these deal types—and against failed deals as a placebo—allows us to isolate the incremental effect of talent acquisition from the broader effects of M&A. Based on this logic, we classify acquiring firms into three groups: (i) successful M&A with significant labor inflows from targets (acqui-hiring deals); (ii)

successful M&A without significant labor inflows (non-acqui-hiring deals), and (iii) failed M&A deals (placebo group). The control group consists of firms with no M&A activity during the sample period. We define market concentration following the approach in Autor et al. (2020) and compute each firm's share of 3-digit industry sales and employment. We then estimate a stacked difference-in-differences specification, constructing cohorts by M&A effective years and restricting the sample to firms without M&A activity in the three-year pre-period of each cohort. Our specification is written as:

$$Y_{i,c,t} = \alpha + \beta_1 \,\text{Group}_{i,c} + \beta_2 \text{Group}_i \times \text{Post}_{c,t} + \theta X_{i,t-1} + \eta + \epsilon_{i,c,t}, \tag{2}$$

where $Y_{i,c,t}$ is an outcome variable for the acquirer i in year t of cohort c. Dependent variables include log sales, log cost of goods sold (COGS), log selling, general, and administrative expenses (SG&A), a dummy that equals 1 if the acquirer operates in industry clusters/segments that neither the acquirer nor the target occupied in the pre-M&A year, and firm-level shares of 3-digit industry sales and employment. The dummy Group_i indicates the firm's deal type as defined above, and $\text{Post}_{c,t}$ is equal to one for years on or after the M&A effective year in each cohort c. We control lagged log sales and log employment, and include firm×cohort, SIC-2d industry×year×cohort, and state×year×cohort fixed effects. We weight each observation by the inverse of the number of same firm-year observations, and standard errors are clustered at the firm level. To compare the effects of acqui-hiring and non-acqui-hiring deals, we also test the coefficients between their interactions with the Post dummy.

Table 5 presents the results. Both talent and non-talent deals increase sales, COGS, SG&A, business-segment entry, and sales and employment market shares, indicating that successful M&A expands scale regardless of talent flows. The scope effects differ sharply. New-product introduction rises significantly only in talent-acquiring deals, and talent deals also produce larger increases in new business segments. The one-sided tests confirm that talent deals have significantly larger effects on new products, new segments, and sales and employment market shares. Conversely, firms with only failed M&A deals show no significant changes in any outcome, confirming that deal announcements alone—absent completion—do not affect firm boundaries or market shares. This placebo result validates the use of failed deals as a counterfactual. These patterns are a scale-versus-scope result: non-talent deals mainly expand scale and product-market power, while talent deals expand the acquirer's scope.

Given that the new-product and new-segment measures are defined relative to both the acquirer and the target, they capture products or segments that neither party operated before the deal. Therefore, they capture genuine scope expansion rather than relabeling existing activities. This is consistent with talent reallocation being efficiency-enhancing: target workers

move to a firm that can deploy them across new products and markets.

Table 5: Firm Boundaries and Market Shares after M&A

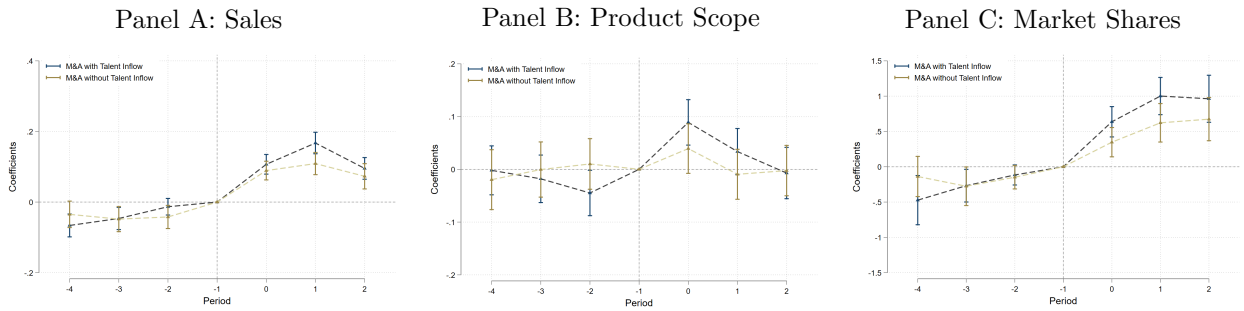
	Ln (Sales)	Ln (COGS)	Ln (XSGA)	Dummy (New Products)	Dummy (New Bus. Seg.)	Share of Sales (× 100)	Share of Emp (× 100)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Failed M&A × Post = 1	0.031	0.029	0.028	0.025	0.005	-0.011	-0.175
	(0.022)	(0.029)	(0.025)	(0.034)	(0.027)	(0.264)	(0.261)
M&A without Talent × Post = 1	0.121***	0.133***	0.145***	0.011	0.055***	0.681***	0.699***
	(0.013)	(0.017)	(0.016)	(0.021)	(0.014)	(0.153)	(0.152)
M&A with Talent × Post = 1	0.152***	0.187***	0.134***	0.054***	0.093***	1.070***	1.110***
	(0.011)	(0.018)	(0.013)	(0.019)	(0.016)	(0.157)	(0.177)
One-Sided Test:							
M&A w/ Talent × Post=1	0.031**	0.054**	-0.010	0.043*	0.038**	0.389**	0.411**
− M&A w/o Talent × Post=1 > 0	(0.017)	(0.025)	(0.021)	(0.029)	(0.022)	(0.218)	(0.230)
R-squared	0.979	0.974	0.986	0.548	0.523	0.970	0.966
No. obs	626,821	626,821	515,190	480,812	626,821	626,821	597,823
Other Controls and FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports estimated coefficients and standard errors of firm boundaries and market shares before and after M&A from the stacked diff-in-diff estimation by Equation 2. From column (1) to (7), the main dependent variables are ln (sales), ln (costs of goods sold), ln (selling, general and administration costs), a dummy variable that equals one if the acquirer has products or segments that neither the acquirer nor the target offered in the year before M&A, and share of sales or employment at 3-digit SIC industry-year level. For the main independent variables, we include a dummy indicating different types of firms based on their M&A activities in each cohort: successful M&A with talent inflow from target firms, successful M&A without talent inflow from target firms, failed M&A, and without M&A (omitted), a *Post* dummy equal to one for years after (including) M&A effective year and zero before, as well as their interactions. The sample is restricted to firms without M&A before the baseline year of each corresponding cohort. In all specifications, we report the one-sided test between the coefficients of M&A with Talent × Post = 1 and M&A without Talent × Post = 1. We include lagged controls of ln (sales) and ln (employment), firm, industry×year and state×year fixed effects. To account for multiple observations within the same firm-year, we weight each observation by the inverse of the group size. Standard errors are clustered at worker level, and all monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

To address the endogeneity concerns, we first use event study to show that acquirers do not show substantial increase in their firm outcomes before M&A, indicating that successful M&A drives the increase in sales, market shares and firm scope in the post period. In particular, market shares and product scope significantly increase more after M&A with talent inflow, implying the role of talents in the acquirer—they increase the number of products, which expand firm boundaries and product market shares significantly. In Table A6, we compare the M&A deals with similar regulatory oversight by restricting deals to those file HSR, or go into antitrust review. Similar results confirm the role of M&A in firms' product market.

Taken together, the empirical results establish two facts. First, M&A transfers substantial human capital, concentrated in managerial, high-skill, and tech workers, which acquirers use to fill specific occupational gaps in their workforce. Second, while all successful deals expand firm scale (sales, costs) and market shares, only talent-acquiring deals generate genuine scope expansion by introducing entirely new products. Non-talent deals, by contrast, primarily expand scale and market power without driving new product creation.

Figure 3: Firm Outcomes of Acquirers − Event Study around M&A



Notes: This figure plots coefficients and depicts 95% confidence intervals of acquiring firms' outcomes before and after M&A deals, as estimated by Equation 2. The dependent variable is ln (sales) in Panel A, a dummy of new product in Panel B, and share of sales at SIC-3d×year level in Panel C. For the main independent variables, we include a dummy indicating different types of firms based on their M&A activities in each cohort: successful M&A with talent inflow from target firms, successful M&A without talent inflow from target firms, failed M&A, and without M&A (omitted), a *Post* dummy equal to one for years after (including) M&A effective year and zero before, as well as their interactions. The sample is restricted to firms without M&A before the baseline year of each corresponding cohort. In all specifications, we include lagged controls of ln (sales) and ln (employment), firm, industry×year and state×year fixed effects. To account for multiple observations within the same firm-year, we weight each observation by the inverse of the group size. Standard errors are clustered at worker level, and all monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

4 Theoretical Framework

The theoretical framework is a multi-market M&A model. Firm 1 is a potential acquirer in an N-firm, M-market Cournot economy. Firm 1 chooses among three discrete actions—status quo, poach into one additional market, or acquire one target—and each action induces a distinct regime for product-market competition, the general-equilibrium wage, and welfare.

4.1 Markets and firms

There are M product markets indexed by $j \in \mathcal{J} = \{1, \ldots, M\}$ and N firms indexed by $i \in \mathcal{I} = \{1, \ldots, N\}$. Market j represents a well-defined product line in which different firms may be active. Firm 1 is the *potential acquirer*; firms $\{2, \ldots, N\}$ are *potential targets*.

Each firm i has a market footprint $\mathcal{M}_i \subseteq \mathcal{J}$, the set of markets in which it can operate, and a firm-specific productivity $\theta_i > 0$ over scarce skilled labor. The collection $\{\mathcal{M}_i\}_{i\in\mathcal{I}}$ and $\{\theta_i\}_{i\in\mathcal{I}}$ summarizes the initial distribution of talent and product scope.

For any regime r (status quo, poaching, or M&A), let $\mathcal{N}_j^r \subseteq \mathcal{I}$ be the set of firms active in market j, with cardinality $n_j^r = |\mathcal{N}_j^r|$, and let $\mathcal{M}_i^r$ be the induced footprint of firm i. Regime $r = 0$ denotes the status quo.

Assumption 1 (Productivity order)**.** *The productivity parameters satisfy*

$$\theta_1 > \theta_2 \geq \cdots \geq \theta_N > 0.$$

4.2 Firm 1's strategic choice

Before product-market competition, Firm 1 chooses a single action σ from the discrete set

$$\Sigma = \underbrace{\{\varnothing\}}_{\text{status quo}} \cup \underbrace{\{\mathsf{P}_j : j \in \mathcal{J} \setminus \mathcal{M}_1\}}_{\text{poach into one market}} \cup \underbrace{\{\mathsf{A}_k : k \in \{2, \ldots, N\}\}}_{\text{acquire one target}}. \tag{3}$$

The action set has cardinality $1 + (M - |\mathcal{M}_1|) + (N - 1)$.

Poaching is market-specific. If Firm 1 poaches, it enters exactly one new market $j^* \in \mathcal{J} \setminus \mathcal{M}_1$, pays a fixed entry cost F_{j^*}, and recruits scarce labor from the external market at friction τ. Its footprint becomes $\mathcal{M}_1^{\mathsf{P}_{j^*}} = \mathcal{M}_1 \cup \{j^*\}$.

Acquisition is target-specific. If Firm 1 acquires target $k \in \{2, \ldots, N\}$ at a Nash-bargaining price P_k^{NB}, it inherits the target's footprint and workforce,

$$\mathcal{M}_1^{\mathsf{A}_k} = \mathcal{M}_1 \cup \mathcal{M}_k, \qquad \mathcal{N}_j^{\mathsf{A}_k} = (\mathcal{N}_j^0 \setminus \{k\}) \cup \{1\} \quad \forall j \in \mathcal{M}_k,$$

and post-merger recruiting friction on the acquired workforce is eliminated: $\tau_1^{\mathsf{A}_k} = 0$. The target receives the Nash price and exits as an independent competitor.

4.3 Demand system

In each market j, aggregate quantity is $Q_j = \sum_{i \in \mathcal{N}_j} q_{ij}$, where q_{ij} is firm i's quantity in market j. A representative consumer with quasi-linear preferences over the vector of quantities $\mathbf{Q} = (Q_1, \ldots, Q_M)^\top$ has utility

$$U(\mathbf{Q}) = \boldsymbol{\alpha}^\top \mathbf{Q} - \tfrac{1}{2}\, \mathbf{Q}^\top \Omega\, \mathbf{Q}, \qquad \boldsymbol{\alpha} \in \mathbb{R}^M_{++}, \quad \Omega \in \mathbb{R}^{M \times M}. \tag{4}$$

The matrix Ω is symmetric positive definite with unit diagonal and off-diagonal entries $\omega_{jk} \in (-1, 1)$. The induced inverse demand system is

$$\mathbf{p} = \boldsymbol{\alpha} - \Omega\, \mathbf{Q}, \qquad \text{i.e.} \qquad p_j = \alpha_j - Q_j - \sum_{k \neq j} \omega_{jk} Q_k. \tag{5}$$

$\omega_{jk} > 0$ marks substitutes, $\omega_{jk} < 0$ complements, and $\omega_{jk} = 0$ independent markets. Cross-market interaction is what makes a multi-product firm internalize demand spillovers across its footprint; it is the channel through which a merger's output expansion in one market spills onto rivals elsewhere.

4.4 Labor market and recruiting friction

Scarce skilled labor is supplied elastically. Let $\bar{S} > 0$ be the baseline endowment, $\underline{w}$ the reservation wage, and $\phi \geq 0$ the supply slope. Aggregate supply is

$$L^s(w) = \bar{S} + \phi\,(w - \underline{w}), \qquad w \geq \underline{w}. \tag{6}$$

When $\phi = 0$, scarce labor is in fixed supply $\bar{S}$; when $\phi > 0$, the scarce wage rises with employment. A firm that recruits from the external labor market incurs a friction $\tau \geq 0$ per unit of scarce labor hired. For the tractability of the model, we assume that the terms τL, F_j, and K_k are transfers to workers as target shareholders.

Firm i's recruiting friction under action σ is

$$\tau_i^\sigma = \begin{cases} 0, & i = 1 \text{ and } \sigma = \mathsf{A}_k \text{ for some } k, \\ \tau, & \text{otherwise.} \end{cases} \tag{7}$$

Marginal cost under action σ is

$$c_{ij}^\sigma = w_g\, a_{j0} + \frac{a_{j1}(w + \tau_i^\sigma)}{\theta_i}. \tag{8}$$

The firm pays $w_g a_0 Q$ for general skill. We normalize the opportunity cost of general skill to zero, so this payment is a transfer to workers.

4.5 Timing

1. Parameters $(\boldsymbol{\alpha}, \Omega, A, \boldsymbol{\theta}, \tau, \{F_j\}, \bar{S})$ and the initial footprints $\{\mathcal{M}_i\}$ are common knowledge.

2. Firm 1 observes the match-specific acquisition synergy, if any, and chooses an action $\sigma \in \Sigma$: status quo, poach into one market j^*, or acquire one target k (price set by Nash bargaining).

3. Conditional on σ and a conjectured wage w, active firms simultaneously choose quantities in each market they serve (multi-product Cournot), taking marginal costs $c_{ij}(w)$ as given.

4. The scarce-labor market clears at the wage w^* satisfying

$$L(\sigma, w^*) = L^s(w^*) = \bar{S} + \phi\,(w^* - \underline{w}), \qquad w^* \geq \underline{w}.$$

For each regime $r(\sigma)$, the equilibrium is a fixed point in $(\mathbf{q}, w)$, combining the Cournot

equilibrium in product markets and scarce-labor-market clearing.

5 Cournot equilibrium with N firms and M markets

Fix a regime r, which determines the active sets $\{\mathcal{N}_j^r\}_j$, the footprints $\{\mathcal{M}_i^r\}_i$, and the cost vector $\{c_{ij}\}$ through (8). Throughout this section we suppress the superscript r to lighten notation, and we treat the wage w as given.

5.1 Firm optimization

A multi–product firm i chooses $\{q_{ij}\}_{j\in\mathcal{M}_i}$ to maximize joint profit across its footprint, taking rivals' quantities as given:

$$\max_{\{q_{ij}\geq 0\}_{j\in\mathcal{M}_i}} \Pi_i = \sum_{j\in\mathcal{M}_i} \Big(\alpha_j - Q_j - \sum_{k\neq j} \omega_{jk} Q_k - c_{ij}\Big) q_{ij}, \qquad Q_j = \sum_{\ell\in\mathcal{N}_j} q_{\ell j}. \tag{9}$$

Differentiating and using $\partial p_{j'}/\partial q_{ij} = -\omega_{jj'}$ (with $\omega_{jj} \equiv 1$), the first–order condition for any active pair (i,j) with $j \in \mathcal{M}_i$ is

$$\underbrace{\alpha_j - Q_j - \sum_{k\neq j} \omega_{jk} Q_k - c_{ij}}_{\text{standard Cournot margin}} \; - \; \underbrace{\sum_{j'\in\mathcal{M}_i,\; j'\neq j} \omega_{jj'}\, q_{ij'}}_{\text{portfolio internalization}} \; = \; q_{ij}. \tag{10}$$

The portfolio term captures the multi–product firm's internalization of demand spillovers across the markets it owns: it shrinks quantities when goods are substitutes ($\omega_{jj'} > 0$) and expands them when goods are complements ($\omega_{jj'} < 0$). The *scope* of internalization is the firm's footprint $\mathcal{M}_i$; an M&A that enlarges $\mathcal{M}_1$ enlarges this scope.

5.2 Equilibrium quantities: the linear system

Collect all active firm–market pairs into an index set $\mathcal{P} = \{(i,j) : j \in \mathcal{M}_i\}$ with cardinality $n = \sum_i |\mathcal{M}_i|$, and stack the corresponding quantities into a vector $\mathbf{q} \in \mathbb{R}^n$. Substituting $Q_k = \sum_{\ell:(\ell,k)\in\mathcal{P}} q_{\ell k}$ into (10), the system of first–order conditions is linear:

$$H\,\mathbf{q} = \mathbf{d}, \qquad d_{(i,j)} = \alpha_j - c_{ij}, \tag{11}$$

where the coefficient on $q_{\ell k}$ in the (i,j) equation is

$$H_{(i,j),(\ell,k)} = \omega_{jk}\Big(1 + \mathbb{1}[\ell = i]\Big), \qquad \omega_{jj} \equiv 1. \tag{12}$$

Equation (12) has a transparent block structure: across distinct firms ($\ell \neq i$) the interaction is the raw demand coupling ω_{jk}, while within a firm ($\ell = i$) it is *doubled* to $2\omega_{jk}$, reflecting the extra portfolio internalization in (10). In particular the own term is $H_{(i,j),(i,j)} = 2$.

5.3 Existence and uniqueness of the product–market equilibrium

Let $S \in \{0,1\}^{n \times M}$ be the market–selection matrix with $S_{(i,j),k} = \mathbb{1}[k = j]$, so that $(S\Omega S^\top)_{(i,j),(\ell,k)} = \omega_{jk}$. Define the block–diagonal matrix $\bigoplus_{i \in \mathcal{I}} \Omega_{\mathcal{M}_i}$, where $\Omega_{\mathcal{M}_i}$ is the principal submatrix of Ω on firm i's footprint. Then

$$H = \underbrace{S\Omega S^\top}_{\text{cross–firm part}} + \underbrace{\bigoplus_{i \in \mathcal{I}} \Omega_{\mathcal{M}_i}}_{\text{within–firm part}}. \tag{13}$$

The decomposition (13) makes it natural to treat H as the sum of a cross–firm interaction matrix and a block–diagonal portfolio matrix.

Proposition 1 (Existence and uniqueness of the product–market equilibrium)**.** *Let $\Omega \succ 0$. For any active set $\mathcal{P}$ and cost vector $\mathbf{c}$:*

1. *H in (12) is symmetric positive definite, so (11) has the unique interior solution $\mathbf{q}^\dagger = H^{-1}\mathbf{d}$.*
2. *The Cournot game with nonnegativity constraints has a unique equilibrium $\mathbf{q}^*$, characterized as the unique solution of the linear complementarity problem $\mathrm{LCP}(H, -\mathbf{d})$.*
3. *The equilibrium $\mathbf{q}^*$ is obtained by the standard active–set procedure: drop any pair with $q^\dagger_{ij} < 0$ from $\mathcal{P}$, re–solve (11) on the reduced index set, and iterate until all retained quantities are nonnegative and all dropped pairs would earn a nonpositive margin.*

Proof. See Appendix A4.1 for a detailed proof. □

Product–market clearing and prices. Given $\mathbf{q}^*$, aggregate quantities in each market are $Q^*_j = \sum_{i \in \mathcal{N}_j} q^*_{ij}$. Product markets clear by construction at prices

$$p^*_j = \alpha_j - Q^*_j - \sum_{k \neq j} \omega_{jk} Q^*_k. \tag{14}$$

We write $\mathbf{Q}^*(\sigma, w)$ and $\mathbf{p}^*(\sigma, w)$ for the equilibrium quantities and prices in the product market induced by action σ at wage w.

Conditional on the active set $\mathcal{P}$, the equilibrium quantity vector is the *exact* closed form

$$\boxed{\mathbf{q}^* = H^{-1}\mathbf{d}} \qquad d_{(i,j)} = \alpha_j - c_{ij}, \tag{15}$$

which holds for any positive–definite Ω, coupled or not. The cross–market coupling does not destroy closed form; it only replaces the scalar per–market inverse by the matrix inverse H^{-1}. We summarize two decompositions that are useful for interpretation and comparative statics; their algebra is developed in Appendix A2.

6 General-equilibrium wage, welfare, and choice

6.1 Labor-market clearing and the equilibrium wage

Given action σ and wage w, firm i's scarce-labor demand in market j is

$$\ell_{ij}(\sigma, w) = \frac{a_{j1}}{\theta_i} q^*_{ij}(\sigma, w),$$

so aggregate scarce-labor demand is

$$L(\sigma, w) = \sum_{(i,j)\in\mathcal{P}^{r(\sigma)}} \ell_{ij}(\sigma, w).$$

The equilibrium wage $w^*(\sigma)$ solves

$$L(\sigma, w^*) = L^s(w^*) = \bar{S} + \phi\,(w^* - \underline{w}), \qquad w^* \geq \underline{w}. \tag{16}$$

If $L(\sigma, \underline{w}) \leq \bar{S}$, the reservation wage binds, $w^* = \underline{w}$, and scarce labor supply is not fully employed. If $L(\sigma, \underline{w}) > \bar{S}$, the wage solves (16) in the interior.

Definition 1 (Equilibrium given an action)**.** *For a fixed action $\sigma \in \Sigma$, an equilibrium is a pair $(\mathbf{q}^*(\sigma), w^*(\sigma))$ such that:*

1. *$\mathbf{q}^*(\sigma)$ is the unique Cournot equilibrium of Proposition 1 at wage $w^*(\sigma)$;*
2. *the scarce-labor market clears:*

$$L(\sigma, w^*(\sigma)) = L^s(w^*(\sigma)), \qquad w^*(\sigma) \geq \underline{w}.$$

Proposition 2 (Equilibrium wage)**.** *For any action σ and parameter vector $(\boldsymbol{\alpha}, \Omega, \{a_{j0}, a_{j1}\}, \boldsymbol{\theta}, \tau, \bar{S}, \phi)$, suppose the scarce-labor excess demand*

$$E(w) = L(\sigma, w) - \left[\bar{S} + \phi(w - \underline{w})\right]$$

is continuous on $[\underline{w}, \infty)$ and satisfies $E(\underline{w}) \geq 0$ and $\lim_{w\to\infty} E(w) < 0$. Then there exists $w^*(\sigma) \geq \underline{w}$ solving (16). If $E(w)$ is strictly decreasing on the relevant region, the solution is unique.

Proof. See Appendix A4.3 for a detailed proof. The appendix proves the fixed-supply benchmark $\phi = 0$; the upward-sloping case $\phi > 0$ is discussed there as an extension. □

The proposition separates existence from uniqueness: with upward-sloping supply and multi-market Cournot, $E(w)$ need not be monotone globally, so the quantitative implementation solves (16) by bracketing and checks the boundary.

6.2 Welfare accounting

Consumers. Quasi-linearity implies

$$CS(\sigma) = \tfrac{1}{2}\, \mathbf{Q}^*(\sigma)^\top \Omega\, \mathbf{Q}^*(\sigma). \tag{17}$$

Firms. Firm i's profit is

$$\Pi_i(\sigma) = \sum_{j \in \mathcal{M}_i^{r(\sigma)}} \left(p_j^* - c_{ij}(w^*)\right) q_{ij}^*, \tag{18}$$

and total operating profit before transfers is $\sum_i \Pi_i(\sigma)$.

Workers and transfers. Worker surplus from scarce labor is

$$WS_{\text{labor}}(\sigma) = w^*(\sigma) L(\sigma) - \int_0^{L(\sigma)} w^s(\ell)\, d\ell, \tag{19}$$

where $w^s(\ell) = \underline{w} + \max\{0, (\ell - \bar{S})/\phi\}$ is the inverse supply when $\phi > 0$. General labor is paid its reservation wage $w_g = 1$ so we have worker surplus as

$$WS_{\text{worker}}(\sigma) = WS_{\text{labor}}(\sigma) + w_g a_0 Q(\sigma). \tag{20}$$

Let

$$T(\sigma) = \tau L(\sigma) + \mathbf{1}_{\sigma=\mathsf{P}_j} F_j + \mathbf{1}_{\sigma=\mathsf{A}_k} IC_k \tag{21}$$

denote transfers to workers, and define total profit net of transfers and general-labor cost:

$$\Pi^{\text{total}}(\sigma) = p(\sigma)Q(\sigma) - w_g a_0 Q(\sigma) - w(\sigma)L(\sigma) - T(\sigma). \tag{22}$$

Total surplus is

$$TS(\sigma) = CS(\sigma) + WS_{\text{worker}}(\sigma) + T(\sigma) + \Pi^{\text{total}}(\sigma), \tag{23}$$

which simplifies to

$$TS(\sigma) = U(\sigma) - \int_0^{L(\sigma)} w^s(\ell)\, d\ell. \tag{24}$$

The transfers $\tau L, F_j, IC_k$ cancel in (24): they are redistributions from firms to workers, not resource costs. The general-skill payment $w_g a_0 Q$ also cancels: it is a transfer from firms to workers, so it raises worker surplus and lowers firm profit one-for-one.

Constraints. Household income is

$$I(\sigma) = w(\sigma)L(\sigma) + w_g a_0 Q(\sigma) + T(\sigma) + \Pi^{\text{total}}(\sigma) = p(\sigma)Q(\sigma). \tag{25}$$

Consumption expenditure is $C(\sigma) = p(\sigma)Q(\sigma)$, so $I(\sigma) = C(\sigma)$ for every action.

6.3 Firm 1's endogenous choice and the acquisition price

Let $\sigma = \mathsf{A}_k$ denote the acquisition of target k. The merged entity earns operating profit $\Pi_{M,k} \equiv \Pi_1(\mathsf{A}_k)$ and incurs a type-specific integration cost IC_k:

$$IC_k = \begin{cases} K_t, & k \in \mathcal{T}, \\ K_h, & k \in \mathcal{H}, \end{cases} \tag{26}$$

where $\mathcal{T}$ and $\mathcal{H}$ are the talent and horizontal target sets defined below.

Each acquisition carries a target-specific match synergy

$$\eta_{1k} \sim \text{Fréchet}(s, \alpha_F), \qquad k = 2, \ldots, N, \tag{27}$$

drawn independently across targets. The synergy is a real match-specific benefit of combining Firm 1 and target k; it is not a productivity shock to either firm. Let

$$\Pi_k^M \equiv \Pi_{M,k} + \eta_{1k} \tag{28}$$

be the merged entity's operating profit including the match synergy.

The acquirer's disagreement payoff is

$$d_{A,k} = \max_{\sigma \in \{\varnothing, \mathsf{P}_j\}} \Pi_1(\sigma), \tag{29}$$

and target k's disagreement payoff is its equilibrium profit under the same no-acquisition action:

$$d_{T,k} = \Pi_k(\sigma_A^{\text{out}}). \tag{30}$$

The acquisition price is determined by Nash bargaining between Firm 1 and target k with bargaining power $\beta \in (0,1)$:

$$P_k^{NB} = \arg\max_P \big(\Pi_k^M - IC_k - P - d_{A,k}\big)^{\beta} \big(P - d_{T,k}\big)^{1-\beta}. \tag{31}$$

The solution is The joint surplus and Nash price are

$$G_k = \Pi_k^M - IC_k - d_{A,k} - d_{T,k}, \qquad P_k^{NB} = d_{T,k} + (1-\beta) G_k, \tag{32}$$

and the acquirer's net payoff is

$$V_1(\mathsf{A}_k) = \Pi_k^M - IC_k - P_k^{NB} = d_{A,k} + \beta G_k. \tag{33}$$

An acquisition is available to the choice set only if

$$G_k \geq 0. \tag{34}$$

If $G_k < 0$, the target cannot receive its disagreement payoff and the acquirer does not prefer the disagreement action; we set $V_1(\mathsf{A}_k) = -\infty$ and remove the action from Σ.

In the benchmark, Firm 1 chooses

$$\sigma^* \in \arg\max_{\sigma \in \Sigma} V_1(\sigma). \tag{35}$$

6.4 Deal types

For target k, let

$$m_k = |\mathcal{M}_k \setminus \mathcal{M}_1| \tag{36}$$

be the number of target markets not served by Firm 1. The baseline classification is

$$k \in \mathcal{H} \iff m_k = 0, \qquad k \in \mathcal{T} \iff m_k > 0. \tag{37}$$

Thus a horizontal target is entirely inside Firm 1's existing footprint, while a talent target brings at least one new market. This D2 definition is the baseline in the quantitative model; the analytical benchmark below also considers the continuous overlap-based definition for exposition.

We discuss the analytical results in the deterministic benchmark in Appendix A3. The benchmark is a special case of the general model; it is used to organize the classification and comparative statics, while the quantitative extension relaxes each restriction.

7 Calibration

We calibrate the quantitative model to firm-level outcomes and to the estimated effects of acquisitions on acquiring firms. The baseline economy has $N = 9$ firms and $M = 3$ product markets.

The model does not explicitly simulate worker flows between target and acquirer. Instead, an acquisition changes Firm 1's footprint and labor demand, and employment is an equilibrium outcome. This simplification keeps the model tractable. The empirical target-to-acquirer flow results are used to motivate the talent channel, not as a simulated flow moment. Scarce skill a is interpreted as high-skilled labor; the model abstracts from occupational composition and does not target manager or seniority shares. Reallocating target workers to Firm 1 makes it easier for firms to expand scope. We evaluate whether this reallocation is efficient through total surplus rather than through worker flows.

Recruiting frictions τ, fixed costs F, and integration costs K all shift action payoffs and overlap with one another. With six targeted moments we cannot identify them separately. We therefore set $K_h = 0.5$, set $F = 0$ and $\tau = 0$, and estimate K_t. Thus K_t absorbs the composition-related integration cost in the estimation.[8]

Implementation. For each simulated economy, we solve the model under every feasible action $\sigma \in \{\varnothing, \mathsf{P}_j, \mathsf{A}_k\}$. Given the deterministic payoffs $V_1(\sigma)$, we smooth firms' choices using the action-level preference shock, which is Gumbel with scale $\lambda > 0$, so the choice probabilities are logit:

$$\Pr(\sigma^* = \sigma) = \frac{\exp(V_1(\sigma)/\lambda)}{\sum_{\sigma' \in \Sigma} \exp(V_1(\sigma')/\lambda)}, \qquad \forall \sigma \in \Sigma. \tag{38}$$

The acquisition payoff $V_1(\mathsf{A}_k)$ includes the Fréchet match synergy η_{1k}; the Gumbel shock is a separate action-level disturbance. Thus the model has two stochastic elements: a match-specific

[8] This is a calibration choice, not a claim that F and τ are economically irrelevant; it means that the data are not asked to separate three highly collinear payoff shifters.

synergy for acquisitions and an action-level shock for the final choice. The match synergy is a private surplus: it affects acquisition payoffs and selection.

External parameters. Table 6 reports the parameters that are assigned externally and held fixed. The general-skill wage is set to $w_g = 1$; the scarce-labor wage is endogenous. We set $K_h = 0.5$, $F = 0$, and $\tau = 0$ to focus on the effect of acquisition prices. The remaining parameters are $N = 9$, $M = 3$, $\lambda = 0.5$, $\bar{S} = 1$, $\phi = 1$, $\bar{w} = 0$, Fréchet shape 2 and scale 0.5, target footprint probability $pT^{raw} = 0.31$, $\pi = 0.60$, and bargaining weight $\beta = 0.5$.

Table 6: External Parameters

Parameter	Description	Value
a_0	General-skill requirement per unit of output	1
w_g	General-skill wage (fixed)	1
K_h	Horizontal integration cost	0.5
N	Number of firms in the economy	9
M	Number of product markets	3
$\bar{S}$	Labor-supply intercept	1
ϕ	Labor-supply slope	1
α_F	Fréchet shape parameter	2
s_F	Fréchet scale parameter	0.5
pT^{raw}	Raw target footprint probability	0.31
π	Talent-acquisition probability	0.60
β	Bargaining weight	0.5

Notes: External parameters are held fixed throughout the calibration. The benchmark sets $\tau = 0$.

Data moments. We target six moments. The dispersion moment is the standard deviation of log labor, $\text{Disp}^{\text{labor}}$, normalized by the mean of log labor. The remaining moments are the conditional talent share among acquisitions, $\Pr(\mathsf{A}_t \mid \text{M\&A})$; the average log employment change around an acquisition, `ma_dlab`; the average change in the acquirer's sales market share, `ma_dsal`; the average number of new product-market segments, `ma_dseg`; and the average markup, `E_markup`. The M&A moments are computed from the event-study sample.

Model moments. For each draw of firm productivities and footprints, we solve every feasible action and form probability-weighted expectations of firm-level statistics. The dispersion moment pools log labor across all active firm-market pairs and all simulated economies. The acquisition moments are conditional expectations within the acquisition subsample: for each action A_k, we record the log employment change and the number of new segments, and average across acquisition actions weighted by $\Pr(\mathsf{A}_k \mid \text{M\&A})$. The markup is the probability-weighted, revenue-weighted average across active firm-market pairs. We use $R = 500$ simulated economies in the benchmark, with common random numbers across parameter evaluations.

Identification. The six parameters $(\alpha_0, a, \sigma_\theta, \omega, K_t, \alpha_{new})$ are matched to six targeted moments. The productivity dispersion σ_θ is disciplined primarily by the dispersion moment; the demand parameters α_0 and α_{new} and the substitution parameter ω are disciplined by markups

and by the employment and sales responses; and a is disciplined by the employment and sales responses. The talent integration cost K_t is identified mainly by the composition of acquisitions and by the employment and scope effects.[9]

Model fit. Table 7 reports the estimated parameters and the targeted moments. The model matches the winsorized dispersion (0.323 versus 0.333), the average markup (2.653 versus 2.660), and the scope effect (0.679 versus 0.640) closely. The employment effect is somewhat high (0.247 versus 0.200), while the sales-share effect is low (0.119 versus 0.150). The talent share is 0.460 in the model versus 0.480 in the data.

Table 7: Estimated Parameters and Targeted Moments

Panel A: Estimated Parameters

Parameter	Description	Estimate
α_0	Home-market demand intercept	19.81
a	Scarce-labor input coefficient	0.10
σ_θ	Dispersion of firm productivity	0.58
ω	Cross-market demand substitution	0.93
K_t	Talent integration cost	0.59
α_{new}	Demand intercept in new markets	0.95

Panel B: Targeted Moments

Moment	Description	Data	Model
$\text{Disp}_{\text{labor}}$	Winsorized dispersion of log labor	0.33	0.32
$\Pr(\mathsf{A}_t \mid \text{M\&A})$	Talent share among acquisitions	0.48	0.46
`ma_dlab`	Log employment change around M&A	0.20	0.25
`ma_dsal`	Sales-share change around M&A	0.15	0.12
`ma_dseg`	New segments around M&A	0.64	0.68
`E_markup`	Revenue-weighted average markup	2.66	2.65

Notes: Panel A reports the structural parameters estimated by simulated method of moments; Panel B compares the targeted moments in the data and in the model. The benchmark uses $R = 500$ simulated economies with $N = 9$ firms and $M = 3$ markets. The dispersion moment applies the same 1st/99th winsorization to the data and to the simulated log-labor distribution. The benchmark sets $\tau = 0$.

Model outcomes and efficiency. Table 8 reports action probabilities, wages, employment, output, markups, consumer surplus, and labor shares at the estimated parameters. Talent acquisitions have the highest wage, employment, and labor share, while horizontal acquisitions have the highest markup and the lowest consumer surplus. The model's talent acquisition enters a market not served by Firm 1, which is the model counterpart of the empirical product and segment results. This is the sense in which labor reallocation to Firm 1 is efficient: it helps the firms to get a bunch of high-skilled labor and expands scope, and the welfare decomposition below shows whether the resulting total surplus is positive.

Welfare decomposition. Table 9 decomposes total surplus into consumer surplus, worker surplus, transfers, and acquirer, target, and other-firm profits. Relative to the status quo,

[9]Because F and τ are fixed, K_t should be read as the integration-cost parameter that absorbs the composition margin, not as a separate estimate of the effect of F or τ.

Table 8: Model outcomes

Action	Wage	Employment	Output	Markup	Labor share
Status quo	0.96	1.96	17.05	2.71	–
Poach	0.91	1.91	17.30	2.47	+3.5%
Horizontal M&A	0.81	1.81	16.84	2.93	−3.0%
Talent M&A	1.13	2.13	17.49	2.27	+8.3%

Notes: Outcomes are simulated at the estimated parameters and weighted by the logit action probabilities. The benchmark sets $\tau = 0$. Labor share is reported in percentage points relative to the status quo (37.4%).

talent acquisitions generate a positive welfare gain, poaching also generates a positive gain, and horizontal acquisitions generate a small negative gain. Target profits are positive, so the participation constraint is satisfied.

Table 9: Welfare decomposition

Action	CS	WS	Transfers	Acq. profit	Target profit	Other profit	Total profit	TS	ΔTS
Status quo	140.60	18.55	0.00	4.49	0.00	27.45	31.94	191.09	0.00
Poach	146.05	18.69	0.00	3.83	0.00	23.91	27.74	192.49	1.40
Horizontal M&A	137.72	18.06	0.50	6.19	5.83	22.70	34.72	191.01	−0.08
Talent M&A	148.94	19.41	0.59	5.50	3.62	14.33	23.44	192.38	1.29
Overall	142.39	18.57	0.06	4.44	0.62	25.35	30.40	191.42	0.53

Notes: CS denotes consumer surplus. WS denotes total worker surplus, including scarce-labor surplus and general-skill income $w_g a_0 Q$. Transfers are $\tau L + F + K$. Total profit is the sum of acquirer, target, and other-firm profits. TS denotes total surplus and satisfies TS = CS + WS + Transfers + Total profit.

Table 10 compares Firm 1's private payoff V_1 with total surplus. Non-talent acquisitions have the highest private payoff (7.03) but a total surplus below the status quo (190.76 versus 191.07). Talent acquisitions have a lower private payoff (6.24) but the highest total surplus among the three acquisition/poaching alternatives (192.31). Thus the private ranking of acquisition types does not coincide with the social ranking: the firm chooses on V_1, while the planner cares about $CS + WS + \Pi$. The planner's maximum is 193.22, compared with the firm-choice expected surplus of 191.55, a selection gap of about 1.67. This is why acquirer profit alone is not a sufficient screen for merger policy.

Table 10: Private Payoffs and Social Surplus

Action	V_1	Total profit	TS−V_1
Status quo	4.49	32.14	186.58
Poach	3.87	28.27	188.47
Horizontal M&A	7.03	34.70	183.73
Talent M&A	6.24	23.09	186.06
Overall	4.53	30.59	187.03

Notes: V_1 is Firm 1's private payoff; total profit sums acquirer, target, and other-firm profits; TS−V_1 is the portion of social surplus not captured by Firm 1, including consumer surplus, worker surplus, and other firms' and target shareholders' profits. Probabilities are logit choice probabilities. The benchmark uses $R = 500$.

Robustness. Table A6 re-estimates the model at $R = 300$, 500, and 1000. The estimates of α_0, a, σ_θ, ω, α_{new}, and K_t are stable across simulation sizes; K_t ranges from 0.585 to 0.589. We therefore use $R = 500$ as the benchmark and report the stable estimates as a robustness check.

8 Conclusion

This paper studies how M&A reallocates talent and shapes firm boundaries and competition. Using matched firm-worker data and antitrust-screened M&A events, we find that completed M&A significantly increase acquirer's talent inflow share from target, with high-skilled and managerial workers disproportionately filling acquirers' occupational gaps. Both talent and non-talent acquisitions expand scale and market shares, while significant increases in new-product introduction are observed only for talent acquisitions.

Our equilibrium model links these talent flows to firms' acquisition choices and their effects on product and labor markets. In the calibrated model, talent acquisitions generate the highest wages, employment, and total surplus among the acquisition and poaching alternatives, whereas non-talent acquisitions deliver the highest private payoff to the acquirer and the lowest consumer surplus. These results highlight how access to skilled labor and product-market competition jointly shape acquisition incentives and can create a divergence between the private and social returns to mergers.

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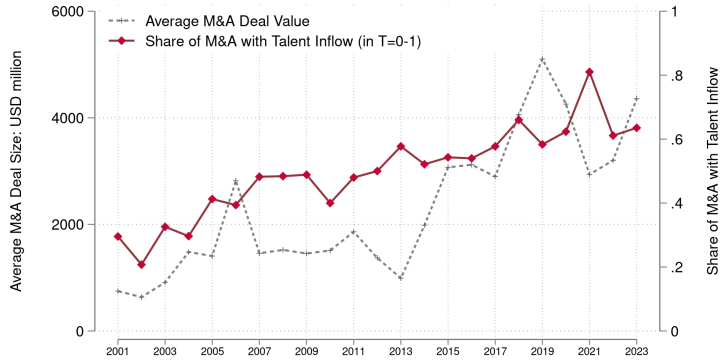
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A1 Appendix Figures and Tables

Figure A1: Number of Successful M&A between US Public Firms over Time



Notes: This figure plots average size of M&A deals, and ratio of M&A deals with talent inflow from targets to acquirers between US public firms during 2001-2023. The deals with talent inflow include those with employees moving from the M&A target to the acquirer in the year or the following year of M&A transaction date.

Table A1: Occupation Classification by O-NET

Occupation	Broad Groups in O-NET (with SOC Codes)
Tech & IT	Computer and Information Systems Managers (11-3020), Architectural and Engineering Managers (11-9040), Aerospace Engineers (17-2010), Agricultural Engineers (17-2020), Bioengineers and Biomedical Engineers (17-2030), Chemical Engineers (17-2040), Civil Engineers (17-2050), Computer Hardware Engineers (17-2060), Electrical Engineers (17-2070), Electronics Engineers, Except Computer (17-2072), Environmental Engineers (17-2080), Industrial Engineers, Including Health and Safety (17-2110), Marine Engineers and Naval Architects (17-2120), Materials Engineers (17-2130), Mechanical Engineers (17-2140), Mining and Geological Engineers (17-2150), Nuclear Engineers (17-2160), Petroleum Engineers (17-2170), Miscellaneous Engineers (17-2190), Drafters (17-3010), Engineering Technologists and Technicians (17-3020), Surveying and Mapping Technicians (17-3030), Computer, Automated Teller, and Office Machine Repairers (49-2010), Radio and Telecommunications Equipment Installers and Repairers (49-2020), Miscellaneous Electrical and Electronic Equipment Mechanics (49-2090)
Sales & Marketing	Advertising and Promotions Managers (11-2010), Marketing and Sales Managers (11-2020), Public Relations and Fundraising Managers (11-2030), Agents and Business Managers of Artists, Performers, and Athletes (13-1010), Buyers and Purchasing Agents (13-1020), Claims Adjusters, Appraisers, Examiners, and Investigators (13-1030), Compliance Officers (13-1040), Cost Estimators (13-1050), Human Resources Workers (13-1070), Logisticians and Project Management Specialists (13-1080), Management Analysts (13-1110), Meeting, Convention, and Event Planners (13-1120), Fundraisers (13-1130), Compensation, Benefits, and Job Analysis Specialists (13-1140), Training and Development Specialists (13-1150), Market Research Analysts and Marketing Specialists (13-1160), Miscellaneous Business Operations Specialists (13-1190), Accountants and Auditors (13-2010), Property Appraisers and Assessors (13-2020), Budget Analysts (13-2030), Credit Analysts (13-2040), Financial Analysts and Advisors (13-2050), Financial Examiners (13-2060), Credit Counselors and Loan Officers (13-2070), Tax Examiners, Collectors, Preparers, and Revenue Agents (13-2080), Miscellaneous Financial Specialists (13-2090), First-Line Supervisors of Sales Workers (41-1010), Cashiers (41-2010), Counter and Rental Clerks and Parts Salespersons (41-2020), Retail Salespersons (41-2030), Advertising Sales Agents (41-3010), Insurance Sales Agents (41-3020), Securities, Commodities, and Financial Services Sales Agents (41-3030), Travel Agents (41-3040), Miscellaneous Sales Representatives, Services (41-3090), Sales Representatives, Wholesale and Manufacturing (41-4010), Models, Demonstrators, and Product Promoters (41-9010), Real Estate Brokers and Sales Agents (41-9020), Sales Engineers (41-9030), Telemarketers (41-9040), Miscellaneous Sales and Related Workers (41-9090)
Data	Computer Systems Analysts (15-1210), Information Security Analysts (15-1220), Computer Support Specialists (15-1230), Database and Network Administrators and Architects (15-1240), Software and Web Developers, Programmers, and Testers (15-1250), Miscellaneous Computer Occupations (15-1290), Actuaries (15-2010), Mathematicians (15-2020), Operations Research Analysts (15-2030), Statisticians (15-2040), Data Scientists (15-2050), Miscellaneous Mathematical Science Occupations (15-2090)
Manufacturing	Industrial Production Managers (11-3050), Purchasing Managers (11-3060), Transportation, Storage, and Distribution Managers (11-3070), Farmers, Ranchers, and Other Agricultural Managers (11-9010), Construction Managers (11-9020), First-Line Supervisors of Construction Trades and Extraction Workers (47-1010), Boilermakers (47-2010), Brickmasons, Blockmasons, and Stonemasons (47-2020), Carpenters (47-2030), Carpet, Floor, and Tile Installers and Finishers (47-2040), Cement Masons, Concrete Finishers, and Terrazzo Workers (47-2050), Construction Laborers (47-2060), Construction Equipment Operators (47-2070), Drywall Installers, Ceiling Tile Installers, and Tapers (47-2080), Electricians (47-2110), Glaziers (47-2120), Insulation Workers (47-2130), Painters and Paperhangers (47-2140), Pipelayers, Plumbers, Pipefitters, and Steamfitters (47-2150), Plasterers and Stucco Masons (47-2160), Reinforcing Iron and Rebar Workers (47-2170), Roofers (47-2180), Sheet Metal Workers (47-2210), Structural Iron and Steel Workers (47-2220), Solar Photovoltaic Installers (47-2230), Helpers, Construction Trades (47-3010), Construction and Building Inspectors (47-4010), Elevator and Escalator Installers and Repairers (47-4020), Fence Erectors (47-4030), Hazardous Materials Removal Workers (47-4040), Highway Maintenance Workers (47-4050), Rail-Track Laying and Maintenance Equipment Operators (47-4060), Septic Tank Servicers and Sewer Pipe Cleaners (47-4070), Miscellaneous Construction and Related Workers (47-4090), Derrick, Rotary Drill, and Service Unit Operators, Oil and Gas (47-5010), Surface Mining Machine Operators and Earth Drillers (47-5020), Explosives Workers, Ordnance Handling Experts, and Blasters (47-5030), Underground Mining Machine Operators (47-5040), Rock Splitters, Quarry (47-5050), Roustabouts, Oil and Gas (47-5070), Helpers–Extraction Workers (47-5080), Miscellaneous Extraction Workers (47-5090), First-Line Supervisors of Production and Operating Workers (51-1010), Aircraft Structure, Surfaces, Rigging, and Systems Assemblers (51-2010), Electrical, Electronics, and Electromechanical Assemblers (51-2020), Engine and Other Machine Assemblers (51-2030), Structural Metal Fabricators and Fitters (51-2040), Fiberglass Laminators and Fabricators (51-2050), Timing Device Assemblers and Adjusters (51-2060), Miscellaneous Assemblers and Fabricators (51-2090), Bakers (51-3010), Butchers and Other Meat, Poultry, and Fish Processing Workers (51-3020), Miscellaneous Food Processing Workers (51-3090), Forming Machine Setters, Operators, and Tenders, Metal and Plastic (51-4020), Machine Tool Cutting Setters, Operators, and Tenders (51-4030), Machinists (51-4040), Metal Furnace Operators, Tenders, Pourers, and Casters (51-4050), Model Makers and Patternmakers, Metal and Plastic (51-4060), Molders and Molding Machine Setters, Operators, and Tenders (51-4070), Multiple Machine Tool Setters, Operators, and Tenders (51-4080), Tool and Die Makers (51-4110), Welding, Soldering, and Brazing Workers (51-4120), Miscellaneous Metal Workers and Plastic Workers (51-4190), Printing Workers (51-5110), Laundry and Dry-Cleaning Workers (51-6010), Pressers, Textile, Garment, and Related Materials (51-6020), Sewing Machine Operators (51-6030), Shoe and Leather Workers (51-6040), Tailors, Dressmakers, and Sewers (51-6050), Textile Machine Setters, Operators, and Tenders (51-6060), Miscellaneous Textile, Apparel, and Furnishings Workers (51-6090), Cabinetmakers and Bench Carpenters (51-7010), Furniture Finishers (51-7020), Model Makers and Patternmakers, Wood (51-7030), Woodworking Machine Setters, Operators, and Tenders (51-7040), Miscellaneous Woodworkers (51-7090), Power Plant Operators, Distributors, and Dispatchers (51-8010), Stationary Engineers and Boiler Operators (51-8020), Water and Wastewater Treatment Plant and System Operators (51-8030), Miscellaneous Plant and System Operators (51-8090), Chemical Processing Machine Setters, Operators, and Tenders (51-9010), Crushing, Grinding, Polishing, Mixing, and Blending Workers (51-9020), Cutting Workers (51-9030), Extruding, Forming, Pressing, and Compacting Machine Setters (51-9040), Furnace, Kiln, Oven, Drier, and Kettle Operators (51-9050), Inspectors, Testers, Sorters, Samplers, and Weighers (51-9060), Jewelers and Precious Stone and Metal Workers (51-9070), Dental and Ophthalmic Laboratory Technicians (51-9080), Packaging and Filling Machine Operators (51-9110), Painting Workers (51-9120), Semiconductor Processing Technicians (51-9140), Photographic Process Workers (51-9150), Computer Numerically Controlled Tool Operators/Programmers (51-9160), Miscellaneous Production Workers (51-9190)
R&D	Education and Childcare Administrators (11-9030), Natural Sciences Managers (11-9120), Agricultural and Food Scientists (19-1010), Biological Scientists (19-1020), Conservation Scientists and Foresters (19-1030), Medical Scientists (19-1040), Miscellaneous Life Scientists (19-1090), Astronomers and Physicists (19-2010), Atmospheric and Space Scientists (19-2020), Chemists and Materials Scientists (19-2030), Environmental Scientists and Geoscientists (19-2040), Miscellaneous Physical Scientists (19-2090), Economists (19-3010), Survey Researchers (19-3020), Psychologists (19-3030), Sociologists (19-3040), Urban and Regional Planners (19-3050), Miscellaneous Social Scientists and Related Workers (19-3090), Agricultural and Food Science Technicians (19-4010), Biological Technicians (19-4020), Chemical Technicians (19-4030), Environmental Science and Geoscience Technicians (19-4040), Nuclear Technicians (19-4050), Social Science Research Assistants (19-4060), Forest and Conservation Technicians (19-4070), Miscellaneous Life, Physical, and Social Science Technicians (19-4090), Occupational Health and Safety Specialists and Technicians (19-5010), Business Teachers, Postsecondary (25-1010), Math and Computer Science Teachers, Postsecondary (25-1020), Engineering and Architecture Teachers, Postsecondary (25-1030), Life Sciences Teachers, Postsecondary (25-1040), Physical Sciences Teachers, Postsecondary (25-1050), Social Sciences Teachers, Postsecondary (25-1060), Health Teachers, Postsecondary (25-1070), Education and Library Science Teachers, Postsecondary (25-1080), Law, Criminal Justice, and Social Work Teachers, Postsecondary (25-1110), Arts, Communications, History, and Humanities Teachers (25-1120), Miscellaneous Postsecondary Teachers (25-1190)

Notes: This table shows the list of O*NET occupations that are classified into the occupation classifications used in the paper.

Table A2: Firm-Year Level Distribution of Occupations Shares

	Mean	SD	Median	N
Tech & IT	0.102	0.152	0.061	253,149
Sales & Marketing	0.287	0.987	0.233	305,197
Data	0.162	0.656	0.093	270,208
Manufacturing	0.110	0.151	0.067	252,808
R&D	0.094	0.343	0.027	232,091
Others	0.543	6.749	0.425	331,244

Notes: This table show the summary statistics of firm-year level occupation shares in the sample.

Table A3: Classification of Workers' Ranks in the Firm

Classification	**Seniority in Revelio Labs**
Managing Department	Senior Executive Level (Ex. CFO; COO; CEO)
	Executive Level (Ex. Managing Director, Treasury; Director of Engineering, Backend Systems; Attorney, Partner)
Middle Manager	Director Level (Ex. Chief of Accountants; VP Network Engineering; Head of Legal)
Supervisor	Manager Level (Ex. Account Manager; Superintendent Engineer; Lead Lawyer)
	Associate/Analyst Level (Ex. Senior Tax Accountant; Lead Electrical Engineer; Attorney)
Entry & Junior	Junior Level (Ex. Account Receivable Bookkeeper, Junior Software QA Engineer, Legal Adviser)
	Entry level / Intern (Ex. Accounting Intern, Software Engineer Trainee, Paralegal)

Notes: This table provides a classification of workers' ranks in the firm based on seniority in Revelio Labs.

Table A4: Summary Statistics

Panel A: Talent Inflow (%)

	Mean	SD	Median	N
Net Inflow	7.686	7.178	5.822	16,130
Share of Inflow from Target	4.278	80.973	0.000	16,130
Share of Inflow from Target – Tech & IT	1.903	23.676	0.000	13,680
Share of Inflow from Target – Sales & Mkting	2.121	27.969	0.000	15,407
Share of Inflow from Target – Data	1.980	22.517	0.000	14,637
Share of Inflow from Target – Manufacturing	2.181	61.836	0.000	13,264
Share of Inflow from Target – R&D	1.105	12.895	0.000	12,262
Share of Inflow from Target – Other	2.067	42.692	0.000	15,663
Share of Inflow from Target – Entry & Junior	1.306	27.768	0.000	15,743
Share of Inflow from Target – Supervisor	3.158	38.637	0.000	15,298
Share of Inflow from Target – Middle Manager	3.941	41.962	0.000	15,035
Share of Inflow from Target – Managing Dep.	3.300	36.088	0.000	13,608

Panel B: Firm-level Outcomes

	Mean	SD	Median	N
Ln (Sales)	5.521	2.559	5.728	626,821
Ln (COGS)	4.975	2.546	5.085	626,821
Ln (Compustat Employment)	6.854	2.282	6.908	590,661
Ln (LinkedIn Employment)	5.832	2.441	5.964	626,821
Ln (XSGA)	4.240	1.936	4.185	516,681
Share of Sales	4.110	11.974	0.246	626,821
Share of Compustat Employment	4.298	12.348	0.240	599,691
Dummy (New Products)	0.427	0.495	0.000	481,032
Dummy (New Segments)	0.121	0.326	0.000	626,821

Notes: This table provides summary statistics of the main variables used in the paper.

Table A5: Talent Acquisitions with Non-Compete Agreements – 2SLS Estimates

Panel A: First Stage

	Dummy (M&A)	Dummy (Successful M&A)	Dummy (M&A with Talent Inflow)
	(1)	(2)	(3)
NCA Implemented × Post = 1	0.024**	0.024**	0.016**
	(0.011)	(0.010)	(0.007)
R-squared	0.129	0.130	0.148
No. obs	28,982	28,982	28,982
Other Controls	Yes	Yes	Yes
Acquiring Firm FE	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes

Panel B: Second Stage

	Share of Inflow from Target Firms (× 100)		
	(1)	(2)	(3)
$\widehat{\text{Dummy (M\&A)}}$	64.695*		
	(38.525)		
Dummy ($\widehat{\text{Successful M\&A}}$)		78.086*	
		(42.401)	
Dummy ($\widehat{\text{M\&A with Talent Inflow}}$)			169.903*
			(101.734)
R-squared	0.147	0.147	0.147
No. obs	15,840	15,840	15,840
Other Controls	Yes	Yes	Yes
Acquiring Firm FE	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes

Table A6: Firm Boundaries and Market Shares after M&A with more Regulatory Oversight

Panel A: M&A Subject to HSR Filings

	Ln (Sales)	Ln (COGS)	Ln (XSGA)	Dummy (New Products)	Bus. Segments (× 100)	Share of Sales (× 100)	Share of Emp
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Failed M&A × Post = 1	0.042*	0.040	0.030	-0.020	-0.240	0.000	-0.208
	(0.024)	(0.033)	(0.028)	(0.036)	(0.219)	(0.335)	(0.329)
M&A without Talent × Post = 1	0.129***	0.144***	0.161***	0.014	0.421***	0.975***	0.972***
	(0.014)	(0.019)	(0.019)	(0.022)	(0.152)	(0.214)	(0.217)
M&A with Talent × Post = 1	0.144***	0.184***	0.132***	0.035*	0.685***	1.202***	1.213***
	(0.011)	(0.018)	(0.015)	(0.018)	(0.127)	(0.174)	(0.199)
R-squared	0.979	0.974	0.986	0.258	0.895	0.970	0.966
No. obs	624,386	624,386	513,030	478,979	612,217	624,386	595,452
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: M&A Subject to FTC/DOJ Second Requests

	Ln (Sales)	Ln (COGS)	Ln (XSGA)	Dummy (New Products)	Bus. Segments (× 100)	Share of Sales (× 100)	Share of Emp
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Failed M&A × Post = 1	0.009	-0.040	-0.031	-0.203***	-0.701**	-0.152	-0.368
	(0.050)	(0.049)	(0.048)	(0.057)	(0.288)	(0.293)	(0.521)
M&A without Talent × Post = 1	0.143***	0.177***	0.197***	-0.039	0.509**	1.304***	1.503***
	(0.027)	(0.036)	(0.048)	(0.035)	(0.250)	(0.476)	(0.446)
M&A with Talent × Post = 1	0.176***	0.217***	0.148***	0.050*	0.530***	1.473***	1.478***
	(0.016)	(0.029)	(0.022)	(0.026)	(0.162)	(0.272)	(0.288)
R-squared	0.979	0.974	0.986	0.258	0.895	0.970	0.966
No. obs	619,337	619,337	508,735	475,545	607,406	619,337	590,497
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel C: M&A Filed for Antitrust Cases

	Ln (Sales)	Ln (COGS)	Ln (XSGA)	Dummy (New Products)	Bus. Segments (× 100)	Share of Sales (× 100)	Share of Emp
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Failed M&A × Post = 1	0.111	-0.187	-0.069	-0.022	-1.731*	-0.657	0.017
	(0.078)	(0.257)	(0.119)	(0.192)	(1.048)	(0.734)	(0.870)
M&A without Talent × Post = 1	0.191***	0.219	0.243***	-0.365***	0.750	4.175	4.345
	(0.055)	(0.136)	(0.060)	(0.130)	(2.008)	(3.261)	(3.630)
M&A with Talent × Post = 1	0.171***	0.152**	0.236***	0.196	3.461***	4.966***	8.469***
	(0.065)	(0.068)	(0.058)	(0.138)	(1.322)	(1.481)	(2.010)
R-squared	0.979	0.974	0.986	0.258	0.895	0.970	0.966
No. obs	616,559	616,559	506,369	473,176	604,650	616,559	587,750
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports estimated coefficients and standard errors of firm outcomes before and after M&A from the stacked diff-in-diff estimation by Equation 2. We restrict M&A deals to those filing HSR in Panel A, deals subject to FTC/DOJsecond requests in Panel B, and antitrust cases in Panel C. From column (1) to (7), the main dependent variables are ln (sales), ln (costs of goods sold), ln (selling, general and administration costs), a dummy of new products indicating positive change in number of products measured by Hoberg and Phillips (2025), number of business segments, share of sales at 3-digit SIC industry-year level, and share of employment at 3-digit SIC industry-year level. For the main independent variables, we include a dummy indicating different types of firms based on their M&A activities in each cohort: successful M&A with talent inflow from target firms, successful M&A without talent inflow from target firms, failed M&A, and without M&A (omitted), a *Post* dummy equal to one for years after (including) M&A effective year and zero before, as well as their interactions. The sample is restricted to firms without M&A before the baseline year of each corresponding cohort. In all specifications, we include lagged controls of ln (sales) and ln (employment), firm, industry×year and state×year fixed effects. To account for multiple observations within the same firm-year, we weight each observation by the inverse of the group size. Standard errors are clustered at worker level, and all monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Table A6: Simulation-size sensitivity

Parameter	$R = 300$	$R = 500$	$R = 1000$
α_0	19.67	19.81	19.67
a	0.10	0.10	0.10
σ_θ	0.58	0.58	0.58
ω	0.93	0.93	0.93
K_t	0.59	0.59	0.59
α_{new}	0.95	0.95	0.95

Notes: All parameter estimates, including the talent integration cost K_t, are stable across simulation sizes.

A2 Appendix: Model Discussions

A2.1 Equilibrium quantities: general closed form

Within– vs. across–market decomposition. Order $\mathcal{P}$ by market and split

$$H = H_0 + C, \tag{39}$$

where H_0 is block diagonal by market—its market–j block is the within–market competition matrix

$$J_j = I_{n_j} + \mathbf{1}_{n_j}\mathbf{1}_{n_j}^\top \qquad \Longrightarrow \qquad J_j^{-1} = I_{n_j} - \tfrac{1}{n_j+1}\,\mathbf{1}_{n_j}\mathbf{1}_{n_j}^\top, \tag{40}$$

and C collects the across–market coupling entries $\omega_{jk}(1 + \mathbb{1}[\ell = i])$ for $j \neq k$.

Spillover expansion. Whenever $\rho(H_0^{-1}C) < 1$, the inverse admits the convergent Neumann series

$$\mathbf{q}^* = H^{-1}\mathbf{d} = \sum_{t=0}^{\infty}(-H_0^{-1}C)^t\, H_0^{-1}\mathbf{d} = \underbrace{H_0^{-1}\mathbf{d}}_{\text{independent–market Cournot}} - \underbrace{H_0^{-1}C\,H_0^{-1}\mathbf{d}}_{\text{first–order demand spillover}} + O(\|C\|^2). \tag{41}$$

The first–order term prices the cross–market spillover: an output expansion in market k feeds, via C, into the residual demand of every market j with $\omega_{jk} \neq 0$, contracting outputs there when goods are substitutes ($\omega_{jk} > 0$) and expanding them when complements ($\omega_{jk} < 0$).

Equicorrelated markets: a scalar closed form. When all markets are symmetrically coupled, $\Omega = (1-\omega)I_M + \omega\,\mathbf{1}_M\mathbf{1}_M^\top$ with $\omega \in (-\frac{1}{M-1}, 1)$, symmetric configurations admit a scalar closed form even with coupling. Appendix A.2 shows that in a benchmark with $\bar{n}$ single–market firms per market at common cost $\bar{c}$, the equilibrium quantity per firm is

$$q^* = \frac{\alpha - \bar{c}}{(\bar{n}+1) + \omega(M-1)\,\bar{n}}, \tag{42}$$

which nests $\omega = 0$ and exhibits $\partial q^*/\partial\omega < 0$ under substitutability.

A2.2 Markups and decomposition

For an active pair (i, j), the FOC of product quantity pins down the price–cost margin,

$$p_j - c_{ij} \;=\; \omega_{jj}\, q_{ij} \;+\; \sum_{l \in \mathcal{M}_i,\, l \neq j} \omega_{jl}\, q_{il} \;\geq\; 0, \tag{43}$$

so the firm–market markup ratio is

$$m_{ij} \;=\; \frac{p_j}{c_{ij}} \;=\; 1 + \frac{1}{c_{ij}} \Big(\omega_{jj} q_{ij} + \sum_{l \in \mathcal{M}_i,\, l \neq j} \omega_{jl} q_{il} \Big). \tag{44}$$

Under the normalization $\omega_{jj} = 1$ adopted for the closed forms, the per-market profit and the firm profit are the quadratic forms, not the diagonal q_{ij}^2, whenever the firm holds coupled markets.

We aggregate the firm–market markups to the firm level using within-firm revenue weights. For firm i with footprint $\mathcal{M}_i$, let

$$s_{ij} = \frac{p_j q_{ij}}{R_i}, \qquad R_i = \sum_{l \in \mathcal{M}_i} p_l q_{il}, \qquad \sum_{j \in \mathcal{M}_i} s_{ij} = 1, \tag{45}$$

be the share of market j in firm i's total revenue. The firm-level (revenue-weighted) markup is

$$\mu_i \;=\; \sum_{j \in \mathcal{M}_i} s_{ij}\, m_{ij}. \tag{46}$$

Aggregate markups weight each firm–market pair by its revenue share. Let

$$\phi_{ij} = \frac{p_j^* q_{ij}^*}{\sum_{(i',j') \in \mathcal{P}} p_{j'}^* q_{i'j'}^*}, \qquad \mu = \sum_{(i,j) \in \mathcal{P}} \phi_{ij}\, m_{ij}. \tag{47}$$

Consider any two regimes 0 and 1. The change in aggregate markup $\Delta\mu = \mu^1 - \mu^0$ admits the exact decomposition

$$\Delta\mu = \underbrace{\sum_{(i,j)} \phi_{ij}^0\, \Delta m_{ij}}_{\Delta\mu^{\text{within}}} \;+\; \underbrace{\sum_{(i,j)} m_{ij}^0\, \Delta\phi_{ij}}_{\Delta\mu^{\text{between}}} \;+\; \underbrace{\sum_{(i,j)} \Delta\phi_{ij}\, \Delta m_{ij}}_{\Delta\mu^{\text{cov}}}, \tag{48}$$

where $\Delta m_{ij} = m_{ij}^1 - m_{ij}^0$ and $\Delta\phi_{ij} = \phi_{ij}^1 - \phi_{ij}^0$. Equation (48) is the standard three–term within–between–covariance identity $\Delta(\phi m) = \phi^0 \Delta m + m^0 \Delta\phi + \Delta\phi\, \Delta m$.

Proposition 3 (Interpretation of the markup decomposition)**.** *For any change in regime from*

0 *to* 1*:*

1. $\Delta\mu^{\text{within}}$ *captures the pure effect of changes in markups holding revenue weights fixed. A non-talent M&A raises this term by monopolizing overlapping markets; a talent–acquiring M&A can lower it because entry at competitive friction–free cost in previously unserved markets adds low–markup, high–output pairs, even as markups may rise on retained markets.*

2. $\Delta\mu^{\text{between}}$ *captures the reallocation of revenue shares toward higher– or lower–markup pairs. A non-talent M&A shifts weight toward the now–monopolized overlap; a talent–acquiring M&A shifts weight toward newly served markets.*

3. $\Delta\mu^{\text{cov}}$ *is a covariance term, positive when the deal simultaneously raises markups and reallocates revenue toward those same pairs (the non-talent case), and typically negative for talent–acquiring deals that add low–markup, high–revenue pairs.*

Proof. See Appendix A4.2 for a detailed proof. □

The same decomposition applies to Firm 1's markup alone by restricting the index set in (48) to pairs (i, j) with $i = 1$.

A3 APPENDIX III: Analytical Benchmark

This section collects the analytical results in the deterministic benchmark. The benchmark imposes

$$\phi = 0, \qquad \eta_{1k} = 0, \qquad \lambda \to 0, \qquad K_t = K_h = K,$$

. Scarce labor is in fixed supply $\bar{S}$, acquisition payoffs are deterministic, and Firm 1 chooses the deterministic argmax. The benchmark is a special case of the general model; it is used to organize the classification and comparative statics, while the quantitative extension relaxes each restriction.

A3.1 Classification of equilibrium regimes and M&A types

This section characterizes the regimes induced by Firm 1's discrete choice $\sigma \in \Sigma$ in the deterministic benchmark. The classification is a statement about the deterministic component of the model. The stochastic extension in the calibration section maps this classification into choice probabilities.

A3.1.1 *Regimes and notation*

A *regime* is the configuration of active firms and markets, together with the induced wage, that obtains under a given action $\sigma \in \Sigma$. We distinguish four benchmark regimes:

1. Status quo: $\sigma = \varnothing$, active sets $\{\mathcal{N}_j^0\}_j$, wage w^0.
2. Poaching: $\sigma = \mathsf{P}_{j^*}$ for some $j^* \in \mathcal{J} \setminus \mathcal{M}_1$, active sets $\{\mathcal{N}_j^{\mathsf{P}_{j^*}}\}_j$, wage $w^{\mathsf{P}_{j^*}}$.
3. Horizontal M&A: $\sigma = \mathsf{A}_k$ with $m_k = 0$, so the target's footprint is contained in Firm 1's footprint; wage w^{A_k}.
4. Talent-acquiring M&A: $\sigma = \mathsf{A}_k$ with $m_k > 0$, so the target brings at least one new market; wage w^{A_k}.

The type-specific integration costs K_h and K_t affect the level of $V_1(\mathsf{A}_k)$ but not the partition of acquisition actions into the horizontal and talent categories.

A3.1.2 *Classification of equilibrium regimes*

Let $V_1(\sigma)$ be Firm 1's deterministic net payoff defined in Section 6.3. In the deterministic benchmark the equilibrium regime is $r(\sigma^*)$, where

$$\sigma^* \in \arg\max_{\sigma \in \Sigma} V_1(\sigma).$$

Proposition 4 (Existence and classification of regimes)**.** *Under Assumption 1, $\Omega \succ 0$, and the deterministic benchmark ($\eta_{1k} = 0$, $\lambda \to 0$), Firm 1's problem $\max_{\sigma \in \Sigma} V_1(\sigma)$ admits at least one solution σ^*. The corresponding equilibrium regime $r(\sigma^*)$ belongs to one of four mutually exclusive types:*

1. *inaction: $\sigma^* = \varnothing$;*
2. *poaching: $\sigma^* = \mathsf{P}_{j^*}$ for some $j^* \in \mathcal{J} \setminus \mathcal{M}_1$;*
3. *horizontal M&A: $\sigma^* = \mathsf{A}_k$ with $m_k = 0$;*
4. *talent-acquiring M&A: $\sigma^* = \mathsf{A}_k$ with $m_k > 0$.*

Proof. See Appendix A4.4 for a detailed proof. □

The proposition is a deterministic classification. The deterministic classification remains the limiting case and the object that organizes the calibration.

A3.2 Comparative statics in demand, competition, and frictions

We now study how Firm 1's optimal regime and the associated equilibrium outcomes vary with key primitives: overall demand, the number of competitors, the cost of recruiting scarce skills, and cross–market substitutability.

Throughout this section we focus on comparative statics at the equilibrium wage $w^*(\sigma)$, i.e. we treat $w^*(\sigma)$ as an endogenous function of $(\boldsymbol{\alpha}, \Omega, A, \boldsymbol{\theta}, \tau, \bar{S})$ and action σ.

A3.2.1 *Demand and the number of competitors*

Consider first a scalar shift in demand and a change in the number of firms. Let $\alpha_j = \bar{\alpha} + \delta_j$, with $\bar{\alpha}$ a common level and δ_j deviations across markets. We compare equilibria as $\bar{\alpha}$ and the number of potential targets change.

Lemma 1 (Demand and markups in the symmetric benchmark)**.** *In the symmetric benchmark of Section A2.1, where each market has $\bar{n}$ active firms at common cost $\bar{c}$, an increase in $\bar{\alpha}$ raises equilibrium quantities and markups in every market. The effect is magnified when $\bar{n}$ is small.*

Proof. See Appendix A4.5.1 for a detailed proof. □

Lemma 1 implies that demand and concentration interact to shape the profitability of non-talent mergers versus scope expansion.

Proposition 5 (Demand, competition, and regime choice)**.** *Fix $(\Omega, A, \boldsymbol{\theta}, \tau, \bar{S})$ and let the number of potential targets vary between a small finite set and a large one. Then:*

1. *For sufficiently high $\bar{\alpha}$ and few competitors, non-talent M&A is strictly more profitable than poaching and talent–acquiring M&A: the gain from eliminating close competitors in overlapping markets dominates the scope–expansion motive.*
2. *For moderate $\bar{\alpha}$ and many competitors, talent–acquiring M&A or poaching dominates non-talent mergers: eliminating a single competitor yields small incremental market power, while entering additional markets or acquiring a footprint of new markets relaxes the scope constraint and reduces the cost of recruiting scarce skills.*

Proof. See Appendix A4.5.2 for a detailed proof. □

A3.2.2 *Cross–market substitutability*

Finally, we consider the effect of cross–market substitutability. In the equicorrelated benchmark of Appendix A.2, Ω takes the form $\Omega = (1-\omega)I_M + \omega\,\mathbf{1}_M\mathbf{1}_M^\top$ with $\omega \in (-\frac{1}{M-1}, 1)$.

Lemma 2 (Substitutability and quantities)**.** *In the equicorrelated benchmark, equilibrium quantities satisfy $\partial q^*/\partial\omega < 0$ for any fixed $(\alpha, \bar{c}, \bar{n})$: stronger substitutability depresses quantities in all markets.*

Proof. See Appendix A4.5.3 for a detailed proof. □

Since M&A changes the structure of $\Omega_{\mathcal{M}_i}$ that each firm internalizes, the portfolio effect of M&A becomes more important when substitutability is strong.

Lemma 3 (Competition amplifies the effect of substitutability)**.** *In the equicorrelated benchmark, the sensitivity of equilibrium quantities to ω,*

$$\frac{\partial q^*}{\partial\omega} = -(\alpha - \bar{c})\,\frac{(M-1)\,\bar{n}}{\big[(\bar{n}+1) + \omega(M-1)\,\bar{n}\big]^2},$$

is decreasing (in absolute value) in $\bar{n}$ for any fixed $(\alpha, \bar{c}, \omega)$. Equivalently, stronger substitutability has a larger effect on quantities in more concentrated markets (small $\bar{n}$), and a smaller effect when there are many competitors.

Proof. See Appendix A4.5.4 for a detailed proof. □

Lemma 4 (Continuity and threshold structure of $\sigma^*(\omega)$)**.** *Fix $(\alpha, A, \boldsymbol{\theta}, \tau, \bar{S})$ and consider the equicorrelated benchmark $\Omega(\omega) = (1-\omega)I_M + \omega\,\mathbf{1}_M\mathbf{1}_M^\top$ with $\omega \in (-\frac{1}{M-1}, 1)$. For each action $\sigma \in \Sigma$, let $V_1(\sigma;\omega)$ denote Firm 1's equilibrium payoff under $\Omega(\omega)$, and define the optimal action*

$$\sigma^*(\omega) \in \arg\max_{\sigma\in\Sigma} V_1(\sigma;\omega).$$

Then:

1. *For each $\sigma \in \Sigma$, $V_1(\sigma;\omega)$ is continuous in ω.*
2. *There exists a finite partition of $(-\frac{1}{M-1}, 1)$ into intervals on each of which $\sigma^*(\omega)$ is constant. Regime changes occur only at threshold values of ω at which two or more actions deliver the same payoff.*

Proof. See Appendix A4.5.5 for a detailed proof. □

Proposition 6 (Substitutability and deal types)**.** *In the equicorrelated benchmark with fixed* $(\alpha, A, \boldsymbol{\theta}, \tau, \bar{S})$*:*

1. *For small* ω *(weak substitutability), talent–acquiring M&A is relatively more attractive: expanding scope adds markets with limited cannibalization of existing sales, and the friction savings on newly served markets dominate.*
2. *For large* ω *(strong substitutability), non-talent M&A is relatively more attractive: the gain from eliminating a close competitor in overlapping markets, which are now close substitutes, dominates the scope motive, and talent–acquiring deals face stronger cannibalization of existing products.*

Proof. See Appendix A4.5.6 for a detailed proof. □

A4 Appendix IV: Proofs

The proofs below are for the general model.

A4.1 Proposition 1

Proof. Fix a regime r and suppress the superscript r to lighten notation. Let

$$\mathcal{P} = \{(i, j) : j \in M_i\}$$

denote the index set of active firm–market pairs, with cardinality $n = |\mathcal{P}|$. Stack all quantities as $\mathbf{q} \in \mathbb{R}^n$, and define $\mathbf{d} \in \mathbb{R}^n$ by

$$d_{(i,j)} = \alpha_j - c_{ij}.$$

Given inverse demand $\mathbf{p} = \boldsymbol{\alpha} - \Omega\mathbf{Q}$ and $Q_j = \sum_{\ell \in \mathcal{N}_j} q_{\ell j}$, firm i's first–order condition in market $j \in M_i$ is

$$\alpha_j - Q_j - \sum_{k \neq j} \omega_{jk} Q_k - c_{ij} \; - \sum_{j' \in M_i,\, j' \neq j} \omega_{jj'} q_{ij'} \;=\; q_{ij}, \tag{49}$$

which corresponds to equation (10) in the main text. Writing $Q_k = \sum_{\ell:(\ell,k)\in\mathcal{P}} q_{\ell k}$ and collecting terms across all $(i, j) \in \mathcal{P}$ yields the linear system

$$H\mathbf{q} = \mathbf{d}, \tag{50}$$

where the coefficient on $q_{\ell k}$ in the (i,j) equation is

$$H_{(i,j),(\ell,k)} \;=\; \omega_{jk}\big(1+\mathbb{1}\{\ell=i\}\big), \qquad \omega_{jj}\equiv 1, \tag{51}$$

as in equation (12).

Step 1: H is symmetric. Since Ω is symmetric, $\omega_{jk}=\omega_{kj}$ for all j,k. Moreover $\mathbb{1}\{\ell=i\}=\mathbb{1}\{i=\ell\}$, so

$$H_{(i,j),(\ell,k)}=\omega_{jk}\big(1+\mathbb{1}\{\ell=i\}\big)=\omega_{kj}\big(1+\mathbb{1}\{i=\ell\}\big)=H_{(\ell,k),(i,j)}.$$

Thus H is symmetric.

Step 2: Decomposition of H and positive definiteness. Let $S\in\{0,1\}^{n\times M}$ be the market–selection matrix with

$$S_{(i,j),k}=\mathbb{1}\{k=j\},$$

so that S maps firm–market pairs to markets. Then for any $(i,j),(\ell,k)\in\mathcal{P}$,

$$\big(S\Omega S^{\top}\big)_{(i,j),(\ell,k)}=\sum_{m,m'} S_{(i,j),m}\,\Omega_{mm'}\,S_{(\ell,k),m'}=\Omega_{jk}=\omega_{jk}.$$

For each firm i, let Ω_{M_i} denote the principal submatrix of Ω on the markets in M_i, and define the block–diagonal matrix

$$\mathcal{L} \;\equiv\; \bigoplus_{i\in\mathcal{I}}\Omega_{M_i},$$

i.e. $\mathcal{L}$ has Ω_{M_i} on the block corresponding to firm i and zeros elsewhere. Then

$$\mathcal{L}_{(i,j),(\ell,k)}=\begin{cases}\omega_{jk}, & \text{if } \ell=i \text{ and } j,k\in M_i,\\ 0, & \text{if } \ell\neq i.\end{cases}$$

Comparing with (51), we obtain

$$H=S\Omega S^{\top}+\mathcal{L}, \tag{52}$$

which is exactly the decomposition in equation (13): the first term captures cross–firm interactions through Ω, the second term captures within–firm portfolio internalization.

Now take any nonzero $\mathbf{z}\in\mathbb{R}^n$ and partition it as $\mathbf{z}=(\mathbf{z}_i)_{i\in\mathcal{I}}$, where $\mathbf{z}_i$ is the subvector

indexed by $(i,j) \in \mathcal{P}$. Using (52),

$$\begin{aligned}\mathbf{z}^\top H \mathbf{z} &= \mathbf{z}^\top S \Omega S^\top \mathbf{z} + \mathbf{z}^\top \mathcal{L} \mathbf{z} \\ &= (S^\top \mathbf{z})^\top \Omega (S^\top \mathbf{z}) + \sum_{i \in \mathcal{I}} \mathbf{z}_i^\top \Omega_{M_i} \mathbf{z}_i.\end{aligned}$$

Because $\Omega \succ 0$, we have $(S^\top \mathbf{z})^\top \Omega (S^\top \mathbf{z}) \geq 0$. Each Ω_{M_i} is a principal submatrix of Ω, so $\Omega_{M_i} \succ 0$ for every i and hence $\mathbf{z}_i^\top \Omega_{M_i} \mathbf{z}_i > 0$ whenever $\mathbf{z}_i \neq 0$. If $\mathbf{z} \neq 0$, there exists at least one firm i with $\mathbf{z}_i \neq 0$, so

$$\sum_i \mathbf{z}_i^\top \Omega_{M_i} \mathbf{z}_i > 0.$$

Therefore $\mathbf{z}^\top H \mathbf{z} > 0$ for all $\mathbf{z} \neq 0$, which proves that H is symmetric positive definite: $H \succ 0$.

Step 3: Interior solution. Since $H \succ 0$, it is invertible. The linear system (50) (or equivalently (11)) has a unique solution

$$\mathbf{q}^\dagger = H^{-1} \mathbf{d}.$$

This is the unique interior stationary point obtained when we ignore the nonnegativity constraints $q_{ij} \geq 0$.

Step 4: Cournot game with nonnegativity constraints. Each firm i chooses $\mathbf{q}_i = (q_{ij})_{j \in M_i}$ to maximize

$$\Pi_i(\mathbf{q}_i, \mathbf{q}_{-i}) = \sum_{j \in M_i} \big(p_j(\mathbf{q}) - c_{ij}\big) q_{ij}$$

subject to $\mathbf{q}_i \geq 0$. From (49), the Hessian of Π_i with respect to $\mathbf{q}_i$ is

$$\frac{\partial^2 \Pi_i}{\partial \mathbf{q}_i \partial \mathbf{q}_i^\top} = -2\,\Omega_{M_i},$$

which is negative definite because $\Omega_{M_i} \succ 0$. Hence Π_i is strictly concave in $\mathbf{q}_i$ for any fixed $\mathbf{q}_{-i}$, so firm i's best response is unique.

Stacking the first–order and complementary slackness conditions yields the linear complementarity problem

$$\mathbf{q} \geq 0, \quad H\mathbf{q} - \mathbf{d} \geq 0, \quad \mathbf{q}^\top (H\mathbf{q} - \mathbf{d}) = 0, \tag{53}$$

i.e. LCP$(H, -\mathbf{d})$. Since $H \succ 0$, H is a P–matrix (all principal minors are positive). A standard result for linear complementarity problems states that when H is a P–matrix, LCP$(H, -\mathbf{d})$ admits a unique solution for every $\mathbf{d}$. Therefore the Cournot game with nonnegativity constraints has a unique equilibrium $\mathbf{q}^*$.

Step 5: Active–set procedure. If the unconstrained solution $\mathbf{q}^\dagger = H^{-1}\mathbf{d}$ has a negative

component $q_{ij}^{\dagger} < 0$ for some $(i,j) \in \mathcal{P}$, then at that point the corresponding margin $(H\mathbf{q}^{\dagger} - \mathbf{d})_{(i,j)}$ is strictly negative. Dropping (i,j) from $\mathcal{P}$ (forcing $q_{ij} = 0$) and re–solving (50) on the smaller index set produces a new candidate that respects $q_{ij} \geq 0$ for all remaining pairs. Each iteration removes at least one pair and there are finitely many pairs, so the procedure terminates in finitely many steps.

The unique solution of (53) coincides with the fixed point of this active–set algorithm: all retained pairs have $q_{ij} \geq 0$ and satisfy their first–order conditions, and all dropped pairs would obtain a nonpositive margin at $\mathbf{q}^{*}$. This establishes parts (ii) and (iii). □

A4.2 Proposition 3

Proof. Let $\mathcal{P}^r$ denote the set of active firm–market pairs in regime $r \in \{0,1\}$, and let

$$m_{ij}^r = \frac{p_j^r - c_{ij}^r}{p_j^r}$$

be the markup of firm i on market j in regime r, as in equation (44). Define the revenue share

$$\varphi_{ij}^r = \frac{p_j^r q_{ij}^r}{\sum_{(i',j') \in \mathcal{P}^r} p_{j'}^r q_{i'j'}^r}, \qquad \sum_{(i,j) \in \mathcal{P}^r} \varphi_{ij}^r = 1,$$

and write the aggregate markup in regime r as

$$\mu^r = \sum_{(i,j) \in \mathcal{P}^r} \varphi_{ij}^r \, m_{ij}^r.$$

For a given change in regime from 0 to 1, define

$$\Delta\mu = \mu^1 - \mu^0, \qquad \Delta m_{ij} = m_{ij}^1 - m_{ij}^0, \qquad \Delta\varphi_{ij} = \varphi_{ij}^1 - \varphi_{ij}^0.$$

When a pair (i,j) is inactive in a regime, we take $\varphi_{ij}^r = 0$ and $m_{ij}^r = 0$ for that regime, so the sums may be taken over the union $\mathcal{P}^0 \cup \mathcal{P}^1$ without loss of generality.

Step 1: Algebraic decomposition. By definition,

$$\Delta\mu = \sum_{(i,j)} \varphi_{ij}^1 m_{ij}^1 - \sum_{(i,j)} \varphi_{ij}^0 m_{ij}^0 = \sum_{(i,j)} \big(\varphi_{ij}^1 m_{ij}^1 - \varphi_{ij}^0 m_{ij}^0\big).$$

For each (i,j), write

$$\varphi_{ij}^1 m_{ij}^1 - \varphi_{ij}^0 m_{ij}^0 = \varphi_{ij}^0 \Delta m_{ij} + m_{ij}^0 \Delta\varphi_{ij} + \Delta\varphi_{ij}\,\Delta m_{ij},$$

which is the exact identity $\Delta(\varphi m) = \varphi^0 \Delta m + m^0 \Delta\varphi + \Delta\varphi\,\Delta m$ applied pairwise. Summing over (i,j) gives

$$\Delta\mu = \underbrace{\sum_{(i,j)} \varphi_{ij}^0 \Delta m_{ij}}_{\Delta\mu^{\text{within}}} + \underbrace{\sum_{(i,j)} m_{ij}^0 \Delta\varphi_{ij}}_{\Delta\mu^{\text{between}}} + \underbrace{\sum_{(i,j)} \Delta\varphi_{ij}\,\Delta m_{ij}}_{\Delta\mu^{\text{cov}}}. \tag{54}$$

This reproduces equation (48) in the main text, with

$$\Delta\mu^{\text{within}} = \sum_{(i,j)} \varphi_{ij}^0 \Delta m_{ij}, \quad \Delta\mu^{\text{between}} = \sum_{(i,j)} m_{ij}^0 \Delta\varphi_{ij}, \quad \Delta\mu^{\text{cov}} = \sum_{(i,j)} \Delta\varphi_{ij}\,\Delta m_{ij}.$$

Step 2: Economic interpretation of each term.

(a) Within component. The term

$$\Delta\mu^{\text{within}} = \sum_{(i,j)} \varphi_{ij}^0 \Delta m_{ij}$$

is the change in the revenue–weighted markup that would obtain if the revenue weights remained fixed at their regime–0 values φ_{ij}^0. It therefore captures the pure effect of changes in markups holding the composition of sales constant. In a non-talent M&A, overlapping markets $j \in O_{1k}$ are monopolized by Firm 1, raising m_{ij}^1 relative to m_{ij}^0 for the surviving pairs, so $\Delta m_{ij} > 0$ on those pairs and $\Delta\mu^{\text{within}}$ is elevated. In a talent–acquiring M&A, entry into previously unserved markets $j \in E_{1k}$ occurs at friction–free competitive cost, so new pairs with relatively low markups enter the sum and can pull $\Delta\mu^{\text{within}}$ down, even if markups on retained markets rise via the cost channel.

(b) Between component. The term

$$\Delta\mu^{\text{between}} = \sum_{(i,j)} m_{ij}^0 \Delta\varphi_{ij}$$

holds markups fixed at their regime–0 levels and measures how the aggregate markup changes when revenue shares are reallocated across pairs with different initial markups. It therefore captures the composition effect: whether sales move toward higher– or lower–markup firm–market pairs. In a non-talent M&A, revenue shifts toward the now-monopolized overlap markets where markups were already relatively high in regime 0, so $\Delta\varphi_{ij} > 0$ on high–markup pairs and

$\Delta\mu^{\text{between}}$ is positive. In a talent–acquiring M&A, weight shifts toward newly served markets, typically with lower pre–merger markups, so $\Delta\varphi_{ij} > 0$ tends to be associated with lower m^0_{ij}, pulling $\Delta\mu^{\text{between}}$ down.

(c) Covariance component. The residual term

$$\Delta\mu^{\text{cov}} = \sum_{(i,j)} \Delta\varphi_{ij}\, \Delta m_{ij}$$

is the covariance between changes in markups and changes in revenue weights across pairs. It is positive when pairs that experience rising markups also gain revenue share, and negative when markups and shares move in opposite directions. In a non-talent M&A, overlap pairs typically see both higher markups and higher revenue shares, so $\Delta m_{ij} > 0$ and $\Delta\varphi_{ij} > 0$ coincide, making $\Delta\mu^{\text{cov}}$ positive. In a talent–acquiring M&A, the deal may add high–revenue, near–competitive new markets (low Δm_{ij} or even negative) while raising markups modestly on retained markets that lose share, so the covariance term is typically negative.

These observations establish the three interpretations stated in the proposition. □

A4.3 Proposition 2: fixed-supply benchmark

Proof for $\phi = 0$. Fix an action $\sigma \in \Sigma$ and the parameter vector $(\boldsymbol{\alpha}, \Omega, A, \boldsymbol{\theta}, \tau, \bar{S})$. The action σ determines the regime $r(\sigma)$, i.e. the active sets $\{\mathcal{N}^r_j\}_j$, footprints $\{M^r_i\}_i$, and friction assignments $\{\tau^r_i\}_i$ as in Section 3. Given a wage $w \geq \underline{w}$, the cost of firm i in market j is

$$c_{ij}(w) = w_g a_{j0} + \frac{a_{j1}(w + \tau^r_i)}{\theta_i}, \tag{55}$$

see equation (8). For each w, holding σ fixed, the Cournot block of Section 5 delivers a unique equilibrium quantity vector $\mathbf{q}^*(\sigma, w)$ by Proposition 1.

Step 1: Labor demand as a function of w. Given σ and w, firm i's demand for scarce labor in market j is

$$\ell_{ij}(\sigma, w) = \frac{a_{j1}}{\theta_i} q^*_{ij}(\sigma, w),$$

by the production technology. Aggregate demand for scarce labor is

$$L(\sigma, w) = \sum_{(i,j)\in\mathcal{P}^r(\sigma)} \ell_{ij}(\sigma, w) = \sum_{(i,j)\in\mathcal{P}^r(\sigma)} \frac{a_{j1}}{\theta_i} q^*_{ij}(\sigma, w), \tag{56}$$

where $\mathcal{P}^r(\sigma)$ is the regime–specific index set of active firm–market pairs. The equilibrium wage

$w^*(\sigma)$ solves the labor–market clearing condition

$$L(\sigma, w^*(\sigma)) = \bar{S}, \qquad w^*(\sigma) \geq \underline{w}, \tag{57}$$

which is equation (16).

Step 2: Monotonicity of $L(\sigma, w)$. Fix a region of wages over which the Cournot active set $\mathcal{P}^r(\sigma)$ is constant. On such a region, the active set in the linear system of Proposition 1 does not change, so we can write

$$\mathbf{q}^*(\sigma, w) = H^{-1}\mathbf{d}(w),$$

where H is the regime–specific SPD matrix from (12), and $\mathbf{d}(w)$ stacks the intercepts minus costs,

$$d_{(i,j)}(w) = \alpha_j - c_{ij}(w).$$

Using (55),

$$d_{(i,j)}(w) = \alpha_j - w_g a_{j0} - \frac{a_{j1}(w + \tau_i^r)}{\theta_i}.$$

Differentiating with respect to w gives

$$\frac{\partial d_{(i,j)}(w)}{\partial w} = -\frac{a_{j1}}{\theta_i} \equiv -v_{(i,j)},$$

where we define $v_{(i,j)} = a_{j1}/\theta_i > 0$ for each $(i,j) \in \mathcal{P}^r(\sigma)$. Stacking, we have

$$\frac{\partial \mathbf{d}(w)}{\partial w} = -\mathbf{v},$$

with $\mathbf{v} \in \mathbb{R}^n$ collecting all $v_{(i,j)}$.

On the region where the active set is fixed,

$$\mathbf{q}^*(\sigma, w) = H^{-1}\mathbf{d}(w),$$

so

$$\frac{\partial \mathbf{q}^*(\sigma, w)}{\partial w} = H^{-1}\frac{\partial \mathbf{d}(w)}{\partial w} = -H^{-1}\mathbf{v}.$$

From (56),

$$L(\sigma, w) = \mathbf{v}^\top \mathbf{q}^*(\sigma, w),$$

so differentiating yields

$$\frac{\partial L(\sigma, w)}{\partial w} = \mathbf{v}^\top \frac{\partial \mathbf{q}^*(\sigma, w)}{\partial w} = -\mathbf{v}^\top H^{-1}\mathbf{v}. \tag{58}$$

By Proposition 1, $H \succ 0$, hence $H^{-1} \succ 0$. Therefore the quadratic form $\mathbf{v}^\top H^{-1}\mathbf{v}$ is strictly positive for any $\mathbf{v} \neq 0$. Because at least one firm uses scarce labor ($a_{j1} > 0$ and $\theta_i > 0$ for some (i, j)), we have $\mathbf{v} \neq 0$, and (58) implies

$$\frac{\partial L(\sigma, w)}{\partial w} < 0$$

whenever the active set is constant. Thus on any region of constant active set, aggregate labor demand is strictly decreasing in w.

Across active–set boundaries, when some $q_{ij}^*(\sigma, w)$ hit zero as w increases, the corresponding contributions to $L(\sigma, w)$ vanish continuously. Because $\mathbf{q}^*(\sigma, w)$ is continuous in $(\mathbf{d}(w), H)$ and $\mathbf{d}(w)$ is affine in w, we obtain that $L(\sigma, w)$ is continuous and weakly decreasing in w on $[\underline{w}, \infty)$, and strictly decreasing on any interval where some firm uses strictly positive labor.

Step 3: Boundary behavior. At low wages, costs are low and aggregate labor demand is high. Formally, letting $w \downarrow \underline{w}$, $c_{ij}(w)$ converges to $a_{j0} + a_{j1}(\underline{w} + \tau_i^r)/\theta_i$, so by continuity of the Cournot solution, $q_{ij}^*(\sigma, w)$ converges to the finite Cournot quantities at that wage. Under the maintained assumption that at least one firm is active in at least one market at $w = \underline{w}$, we have

$$L(\sigma, \underline{w}) = \sum_{(i,j)} \frac{a_{j1}}{\theta_i} q_{ij}^*(\sigma, \underline{w}) > 0.$$

By choosing parameters (in particular $\bar{S}$) so that the total supply $\bar{S}$ is not larger than aggregate labor demand at the lower bound (which is satisfied in the quantitative extension), we have

$$L(\sigma, \underline{w}) \geq \bar{S}.$$

At sufficiently high wages, labor becomes prohibitively expensive and firms shut down. Because $c_{ij}(w)$ grows linearly in w, there exists $\bar{w}$ such that for all $w \geq \bar{w}$ the Cournot best responses yield $q_{ij}^*(\sigma, w) = 0$ for all (i, j) (the standard exit condition in linear Cournot). Hence

$$L(\sigma, w) = 0 \quad \text{for all } w \geq \bar{w}.$$

Choosing such a $\bar{w}$, we have in particular $L(\sigma, \bar{w}) = 0 < \bar{S}$.

Step 4: Existence and uniqueness. From Steps 2 and 3, $L(\sigma, w)$ is continuous on $[\underline{w}, \bar{w}]$, strictly decreasing wherever it is positive, and satisfies

$$L(\sigma, \underline{w}) \geq \bar{S}, \qquad L(\sigma, \bar{w}) < \bar{S}.$$

By the intermediate value theorem, there exists at least one wage $w^*(\sigma) \in [\underline{w}, \bar{w}]$ such that $L(\sigma, w^*(\sigma)) = \bar{S}$. Monotonicity implies that this solution is unique: if $w_1 < w_2$ both solved $L(\sigma, w) = \bar{S}$, strict decreasingness on any interval with positive labor demand would be violated. Thus there exists a unique $w^*(\sigma) \geq \underline{w}$ solving (57), as claimed. □

Upward-sloping supply ($\phi > 0$). For $\phi > 0$, define excess demand

$$E(w) = L(\sigma, w) - \left[\bar{S} + \phi(w - \underline{w})\right].$$

The proof for $\phi = 0$ establishes that $L(\sigma, w)$ is continuous and weakly decreasing on $[\underline{w}, \infty)$, with $L(\sigma, \underline{w}) \geq \bar{S}$ and $L(\sigma, w) = 0$ for large w. Since $\bar{S} + \phi(w - \underline{w})$ is continuous and strictly increasing, E is continuous and satisfies $E(\underline{w}) \geq 0$ and $\lim_{w\to\infty} E(w) < 0$. The intermediate value theorem therefore gives existence. Uniqueness requires an additional condition: if

$$\frac{\partial L(\sigma, w)}{\partial w} < \phi$$

on the relevant region (equivalently $E'(w) < 0$), the crossing is unique. With multi-market Cournot and active-set switches, L is only piecewise smooth and E need not be globally monotone, so the general model cannot guarantee uniqueness without this condition. The quantitative implementation solves $E(w) = 0$ by bracketing on $[\underline{w}, \bar{w}]$, checks the boundary, and verifies that the solution lies in the region where the active set is constant. This is the sense in which the $\phi = 0$ proof extends: the fixed-supply argument is the benchmark; the upward-sloping case adds a supply slope to the crossing condition and is solved numerically when the sufficient monotonicity condition fails.

A4.4 Proposition 4: deterministic classification

Proof. Fix the deterministic benchmark $\eta_{1k} = 0$. The action set Σ is finite by (3). For every feasible $\sigma \in \Sigma$, Proposition 1 gives a unique Cournot equilibrium at each wage, and Proposition 2 gives an equilibrium wage $w^*(\sigma)$. Hence $V_1(\sigma)$ is well defined and real-valued for every feasible action. Since Σ is finite, $\max_{\sigma\in\Sigma} V_1(\sigma)$ admits at least one maximizer σ^*; the status-quo action is always available, so the maximization is well posed even if some acquisitions are removed by participation.

Every action in Σ is either $\varnothing$, a poaching action P_j, or an acquisition A_k. For an acquisition, the integer $m_k = |\mathcal{M}_k \backslash \mathcal{M}_1|$ satisfies exactly one of $m_k = 0$ or $m_k > 0$. By the D2 definition (37), these are respectively horizontal and talent-acquiring targets. The type-specific costs K_h and K_t change the value of $V_1(\mathsf{A}_k)$ but do not affect this partition. Participation removes actions with

$G_k < 0$; the remaining feasible actions are still a subset of the same four categories. Therefore the equilibrium regime $r(\sigma^*)$ belongs to exactly one of the four types stated in Proposition 4.

In the quantitative model, the Fréchet synergy replace the single maximizer by a probability distribution over actions. The same partition applies conditional on the realized η_{1k}; it is not a statement that a single regime is observed with probability one. □

A4.5 Comparative statics: proofs

The proofs below are for the analytical benchmark: $\phi = 0$, $\eta_{1k} = 0$, $K_t = K_h = K$.

A4.5.1 *Lemma 1*

Proof. In the symmetric benchmark with $\bar{n}$ single–market firms per market at common cost $\bar{c}$ and equicorrelated demand $\Omega = (1-\omega)I_M + \omega\,\mathbf{1}_M\mathbf{1}_M^\top$, the equilibrium quantity per firm in each market is

$$q^* = \frac{\bar{\alpha} - \bar{c}}{(\bar{n}+1) + \omega(M-1)\,\bar{n}}, \tag{59}$$

which is equation (42) in the main text. The denominator is strictly positive by the admissible range for ω, so q^* is well defined whenever $\bar{\alpha} > \bar{c}$.

Effect of $\bar{\alpha}$ on quantities. Differentiating (59) with respect to $\bar{\alpha}$, treating $(\bar{n}, \bar{c}, \omega, M)$ as fixed, yields

$$\frac{\partial q^*}{\partial \bar{\alpha}} = \frac{1}{(\bar{n}+1) + \omega(M-1)\,\bar{n}} > 0.$$

Hence, for any fixed $\bar{n}$, an increase in $\bar{\alpha}$ strictly increases the equilibrium quantity per firm q^* in every market. Because total quantity in each market is $Q^* = \bar{n}\,q^*$, it follows that $\partial Q^*/\partial\bar{\alpha} > 0$ as well.

Effect of $\bar{\alpha}$ on markups. In the symmetric benchmark, all firms have the same cost $\bar{c}$ and face the same price $\bar{p}$ in each market. From inverse demand,

$$\bar{p} = \bar{\alpha} - Q^* - \omega(M-1)\,Q^* = \bar{\alpha} - \big[1 + \omega(M-1)\big]\bar{n}\,q^*.$$

Substituting (59),

$$\bar{p} = \bar{\alpha} - \big[1 + \omega(M-1)\big]\,\bar{n}\,\frac{\bar{\alpha} - \bar{c}}{(\bar{n}+1) + \omega(M-1)\,\bar{n}}.$$

Differentiating with respect to $\bar{\alpha}$ gives

$$\frac{\partial \bar{p}}{\partial \bar{\alpha}} = 1 - \big[1 + \omega(M-1)\big]\,\bar{n}\,\frac{1}{(\bar{n}+1) + \omega(M-1)\,\bar{n}}.$$

Note that

$$(\bar{n}+1)+\omega(M-1)\,\bar{n} = 1+\bar{n}\big[1+\omega(M-1)\big],$$

so

$$\frac{\partial \bar{p}}{\partial \bar{\alpha}} = \frac{1+\bar{n}\big[1+\omega(M-1)\big]-\bar{n}\big[1+\omega(M-1)\big]}{1+\bar{n}\big[1+\omega(M-1)\big]} = \frac{1}{(\bar{n}+1)+\omega(M-1)\,\bar{n}} > 0.$$

Thus, an increase in $\bar{\alpha}$ raises the equilibrium price in each market.

The (common) markup in each market is

$$m = \frac{\bar{p}-\bar{c}}{\bar{p}}.$$

Since $\bar{c}$ is fixed and we have just established that $\bar{p}$ increases with $\bar{\alpha}$, and demand is linear, the marginal revenue schedule shifts out one–for–one with $\bar{\alpha}$. In the symmetric Cournot equilibrium the output adjustment is proportional to the demand shift, so the price–cost margin $\bar{p}-\bar{c}$ also rises with $\bar{\alpha}$. Formally, for linear demand and linear costs the markup is a positive multiple of q^*:

$$\bar{p}-\bar{c} = \frac{\partial \Pi_i}{\partial q_{ij}}\Big|_{q^*} = q^*\big[1+\omega(M-1)\big],$$

so

$$\frac{\partial}{\partial \bar{\alpha}}(\bar{p}-\bar{c}) = \big[1+\omega(M-1)\big]\,\frac{\partial q^*}{\partial \bar{\alpha}} > 0.$$

Combining this with $\partial\bar{p}/\partial\bar{\alpha} > 0$ yields $\partial m/\partial\bar{\alpha} > 0$.

Amplification when $\bar{n}$ is small. From (59), the sensitivity of quantity to $\bar{\alpha}$ is

$$\frac{\partial q^*}{\partial \bar{\alpha}} = \frac{1}{(\bar{n}+1)+\omega(M-1)\,\bar{n}}.$$

Holding $(\bar{c},\omega,M)$ fixed, this derivative is decreasing in $\bar{n}$, because the denominator is strictly increasing in $\bar{n}$. Thus a given increase in $\bar{\alpha}$ produces a larger change in q^* when $\bar{n}$ is small. Since both $\bar{p}-\bar{c}$ and the markup m are proportional to q^* in this linear symmetric setting, the effect of $\bar{\alpha}$ on markups is likewise stronger when $\bar{n}$ is small.

This establishes that in the symmetric benchmark, higher $\bar{\alpha}$ raises quantities and markups in every market, with a magnified effect under more concentrated (small $\bar{n}$) market structures. □

A4.5.2 *Proposition 5*

Proof. Fix $(\Omega, A, \boldsymbol{\theta}, \tau, \bar{S})$ and consider how Firm 1's net payoff $V_1(\sigma)$ varies with the common demand level $\bar{\alpha}$ and with the number of potential targets (which determines the degree of competition in overlapping markets).

Step 1: Effect of $\bar{\alpha}$ and competition on markups. Lemma 1 shows that in the symmetric benchmark with $\bar{n}$ active firms per market at common cost $\bar{c}$, the equilibrium quantity per firm is

$$q^* = \frac{\bar{\alpha} - \bar{c}}{(\bar{n}+1) + \omega(M-1)\,\bar{n}},$$

and that both quantities and markups are increasing in $\bar{\alpha}$, with the sensitivity $\partial q^*/\partial\bar{\alpha}$ (and hence the sensitivity of markups) *decreasing* in $\bar{n}$.

Thus, when the number of competitors in a given market is small, an increase in $\bar{\alpha}$ generates a large increase in equilibrium quantities and markups in that market; when the number of competitors is large, the same demand shift has a more muted effect on markups.

Step 2: non-talent gains vs scope gains. For a non-talent–type target k with large overlap $\mathcal{O}_{1k}$ and small extension $\mathcal{E}_{1k}$, the incremental profit to Firm 1 from acquiring k relative to the status quo can be decomposed schematically as

$$\Delta V_1^{\text{con}}(k) = \Gamma_k^{\text{con}}(\bar{\alpha}, \bar{n}_{\mathcal{O}}) + \Gamma_k^{\text{fric}}(\tau) - P_k^{NB},$$

where $\bar{n}_{\mathcal{O}}$ is the typical number of competitors in the overlap markets, Γ_k^{con} captures the gain from eliminating competitors on $\mathcal{O}_{1k}$ (markups on those markets rise), and Γ_k^{fric} is the friction saving from setting $\tau_1 = 0$ on Firm 1's footprint. The Nash price P_k^{NB} is a continuous function of these gains via (32).

For a talent–acquiring target k with small $\mathcal{O}_{1k}$ and large $\mathcal{E}_{1k}$, the incremental value can be written as

$$\Delta V_1^{\text{tal}}(k) = \tilde{\Gamma}_k^{\text{tal}}(\bar{\alpha}, \bar{n}_{\mathcal{E}}) + \Gamma_k^{\text{fric}}(\tau) - P_k^{NB},$$

where $\tilde{\Gamma}_k^{\text{tal}}$ captures the gain from entering many new markets at friction–free cost and $\bar{n}_{\mathcal{E}}$ is the typical number of competitors in those new markets. Poaching into a single new market j generates an analogous gain $\Delta V_1^{\text{poach}}(j)$ that includes only the profit on j at friction τ minus the entry cost F_j.

In all cases, Γ_k^{con} scales with the pre–merger markup and quantity on the overlap markets, while $\tilde{\Gamma}_k^{\text{tal}}$ and $\Delta V_1^{\text{poach}}(j)$ scale with the profit opportunities in previously unserved or thinly served markets.

Step 3: High demand and few competitors. Consider first the case where the number of potential targets is small, so each overlap market has a small number of competitors $\bar{n}_{\mathcal{O}}$. By Lemma 1, for sufficiently high $\bar{\alpha}$, equilibrium quantities and markups in these concentrated markets are large, and the effect of a further increase in $\bar{\alpha}$ on markups is strong when $\bar{n}_{\mathcal{O}}$ is small. Acquiring a non-talent target then removes a close competitor in markets with high

margins and high sensitivity to demand, so the overlap gain Γ_k^{con} becomes large relative to the modest scope gains offered by either poaching or acquiring a mostly new market footprint.

Formally, as $\bar{\alpha} \to \infty$ with small $\bar{n}_{\mathcal{O}}$, the gain $\Gamma_k^{\text{con}}(\bar{\alpha}, \bar{n}_{\mathcal{O}})$ grows without bound relative to $\tilde{\Gamma}_k^{\text{tal}}(\bar{\alpha}, \bar{n}_{\mathcal{E}})$ and $\Delta V_1^{\text{poach}}(j)$, because the non-talent deal amplifies already large markups on overlap markets, whereas new markets in a more competitive environment generate only limited incremental profit per unit of demand. Continuity of $V_1(\sigma)$ in $\bar{\alpha}$ then implies that for sufficiently high $\bar{\alpha}$ and few competitors, we have

$$\max_k \Delta V_1^{\text{con}}(k) \;>\; \max\Big\{ \max_k \Delta V_1^{\text{tal}}(k),\; \max_j \Delta V_1^{\text{poach}}(j),\; 0 \Big\},$$

so the optimal regime is a non-talent M&A.

This establishes part (i).

Step 4: Moderate demand and many competitors. Now consider the opposite extreme in which the number of potential targets is large, so there are many competitors in each market and the typical number $\bar{n}_{\mathcal{O}}$ is high. By Lemma 1, a given $\bar{\alpha}$ produces smaller markups when $\bar{n}_{\mathcal{O}}$ is large, and $\partial q^*/\partial \bar{\alpha}$ (and hence the response of markups) is weak. Eliminating a single competitor from a crowded market therefore yields only a small incremental change in markup and quantity: the non-talent gain $\Gamma_k^{\text{con}}(\bar{\alpha}, \bar{n}_{\mathcal{O}})$ becomes modest.

At the same time, when there are many potential targets, Firm 1 can select targets with large scope–extension sets $\mathcal{E}_{1k}$ or attractive poaching markets j where it is not yet present. In that environment, *scope* gains from entering new markets or acquiring a footprint of new markets—captured by $\tilde{\Gamma}_k^{\text{tal}}(\bar{\alpha}, \bar{n}_{\mathcal{E}})$ and $\Delta V_1^{\text{poach}}(j)$—are relatively more important. They both relax the scope constraint (allowing Firm 1 to expand output into new lines) and, in the talent–acquiring case, reduce the cost of recruiting scarce skills by setting $\tau_1 = 0$ on the expanded footprint.

For moderate $\bar{\alpha}$ and sufficiently large $\bar{n}_{\mathcal{O}}$, the gap between non-talent gains and scope gains flips sign:

$$\max_k \Delta V_1^{\text{con}}(k) \;<\; \max\Big\{ \max_k \Delta V_1^{\text{tal}}(k),\; \max_j \Delta V_1^{\text{poach}}(j) \Big\},$$

so the optimal regime is either a talent–acquiring M&A or poaching, rather than non-talent. Again, continuity of $V_1(\sigma)$ in the underlying quantities and markups guarantees that this inequality holds on an open set of $(\bar{\alpha}, \bar{n}_{\mathcal{O}})$ values corresponding to moderate demand and many competitors.

This establishes part (ii) and completes the proof. □

A4.5.3 *Lemma 2*

Proof. In the equicorrelated benchmark with

$$\Omega = (1-\omega)I_M + \omega\,\mathbf{1}_M\mathbf{1}_M^\top, \qquad \omega \in \big(-\tfrac{1}{M-1}, 1\big),$$

and $\bar{n}$ symmetric single–market firms per market at common cost $\bar{c}$, Section A2.1 shows that the equilibrium quantity per firm in each market is

$$q^* = \frac{\alpha - \bar{c}}{(\bar{n}+1) + \omega(M-1)\,\bar{n}}, \tag{60}$$

which is equation (42). The admissible range of ω implies that the denominator

$$D(\omega) \equiv (\bar{n}+1) + \omega(M-1)\,\bar{n}$$

is strictly positive for all $\omega \in (-\frac{1}{M-1}, 1)$, so q^* is well defined whenever $\alpha > \bar{c}$.

Holding $(\alpha, \bar{c}, \bar{n})$ fixed, differentiate (60) with respect to ω:

$$\frac{\partial q^*}{\partial \omega} = (\alpha - \bar{c})\,\frac{\partial}{\partial \omega}\Big(\frac{1}{D(\omega)}\Big) = (\alpha - \bar{c})\,\Big(-\frac{D'(\omega)}{D(\omega)^2}\Big),$$

where

$$D'(\omega) = \frac{\partial}{\partial \omega}\big[(\bar{n}+1) + \omega(M-1)\,\bar{n}\big] = (M-1)\,\bar{n} > 0.$$

Because $\alpha > \bar{c}$ and $D(\omega) > 0$, we have

$$\frac{\partial q^*}{\partial \omega} = -(\alpha - \bar{c})\,\frac{(M-1)\,\bar{n}}{D(\omega)^2} < 0$$

for all admissible ω. Thus, stronger substitutability (ω closer to 1) strictly reduces the equilibrium quantity per firm in every market, holding $(\alpha, \bar{c}, \bar{n})$ fixed.

This proves the claim. □

A4.5.4 *Lemma 3*

Proof. From equation (42), the equilibrium quantity per firm is

$$q^* = \frac{\alpha - \bar{c}}{D(\bar{n}, \omega)}, \qquad D(\bar{n}, \omega) \equiv (\bar{n}+1) + \omega(M-1)\,\bar{n}.$$

For any admissible $\omega \in (-\frac{1}{M-1}, 1)$ we have $D(\bar{n}, \omega) > 0$, so q^* is well defined whenever $\alpha > \bar{c}$.

Lemma 2 showed that

$$\frac{\partial q^*}{\partial \omega} = -(\alpha - \bar{c})\,\frac{\partial D(\bar{n},\omega)/\partial \omega}{D(\bar{n},\omega)^2} = -(\alpha - \bar{c})\,\frac{(M-1)\,\bar{n}}{D(\bar{n},\omega)^2} < 0.$$

For fixed $(\alpha, \bar{c}, \omega)$, define the absolute sensitivity

$$S(\bar{n}) \equiv -\frac{\partial q^*}{\partial \omega} = (\alpha - \bar{c})\,\frac{(M-1)\,\bar{n}}{D(\bar{n},\omega)^2} > 0.$$

We want to show that $S(\bar{n})$ is decreasing in $\bar{n}$, i.e. $\partial S(\bar{n})/\partial \bar{n} < 0$.

Write $D(\bar{n},\omega)$ as

$$D(\bar{n},\omega) = 1 + \bar{n}\big[1 + \omega(M-1)\big] \equiv 1 + K\,\bar{n},$$

where $K \equiv 1 + \omega(M-1)$ is fixed given (ω, M). Then

$$S(\bar{n}) = (\alpha - \bar{c})(M-1)\,\frac{\bar{n}}{(1+K\bar{n})^2}.$$

Since $(\alpha - \bar{c})(M-1) > 0$, the sign of $\partial S/\partial \bar{n}$ is the same as the sign of

$$\frac{\partial}{\partial \bar{n}}\Big[\frac{\bar{n}}{(1+K\bar{n})^2}\Big].$$

Differentiating,

$$\frac{\partial}{\partial \bar{n}}\Big[\frac{\bar{n}}{(1+K\bar{n})^2}\Big] = \frac{(1+K\bar{n})^2 - \bar{n}\cdot 2(1+K\bar{n})K}{(1+K\bar{n})^4} = \frac{(1+K\bar{n})\big[(1+K\bar{n}) - 2K\bar{n}\big]}{(1+K\bar{n})^4}.$$

The denominator is strictly positive. The sign is determined by the term in brackets:

$$(1+K\bar{n}) - 2K\bar{n} = 1 - K\bar{n}.$$

Therefore

$$\operatorname{sign}\Big(\frac{\partial S(\bar{n})}{\partial \bar{n}}\Big) = \operatorname{sign}(1 - K\bar{n}).$$

When $\bar{n}$ is large enough that $K\bar{n} > 1$, we have $\partial S(\bar{n})/\partial \bar{n} < 0$, so the absolute sensitivity $S(\bar{n})$ is decreasing in $\bar{n}$. Economically, in markets with many competitors the effect of a marginal increase in substitutability on each firm's quantity is smaller.

Conversely, when $\bar{n}$ is small such that $K\bar{n} < 1$, the derivative $\partial S(\bar{n})/\partial \bar{n} > 0$ and the absolute sensitivity increases with the first few entrants: going from monopoly to duopoly can increase the responsiveness of quantities to ω. Combining both regions, we obtain that the function $S(\bar{n})$ is hump–shaped in $\bar{n}$, with its maximum attained near $K\bar{n} = 1$, and strictly decreasing

for $\bar{n}$ above that threshold.

In particular, for any fixed $(\alpha, \bar{c}, \omega)$, when comparing a moderately concentrated market (small $\bar{n}$ near the $K\bar{n} = 1$ threshold) to a very competitive one (large $\bar{n}$), we have

$$\left|\frac{\partial q^*}{\partial \omega}\right| \text{ is larger in the concentrated market than in the competitive one.}$$

Equivalently, stronger substitutability depresses quantities more in markets with fewer competitors than in markets with many competitors.

This proves the claim. □

A4.5.5 *Lemma 4*

Proof. **(i) Continuity of $V_1(\sigma;\omega)$ in ω.** Fix an action $\sigma \in \Sigma$. For each ω, the regime $r(\sigma)$ determines the active sets and cost structure, and the equicorrelated $\Omega(\omega)$ determines the Cournot matrix $H(\omega)$ as in Section 5. Under the maintained assumptions (linear demand, $\Omega(\omega) \succ 0$ for all admissible ω), Proposition 1 implies that the Cournot equilibrium $\mathbf{q}^*(\sigma;\omega,w)$ is uniquely defined and continuous in $(\mathbf{d}(\omega), H(\omega))$, and $H(\omega)$ depends continuously on ω.

Proposition 2 then implies that the general–equilibrium wage $w^*(\sigma;\omega)$ is uniquely determined as the solution of the continuous, strictly decreasing equation $L(\sigma, w;\omega) = \bar{S}$ in w, with L continuous in (w,ω). The implicit function theorem and monotone comparative statics arguments used in the proof of Proposition 2 imply that $w^*(\sigma;\omega)$ is continuous in ω.

Firm 1's payoff $V_1(\sigma;\omega)$ is obtained by evaluating profits and any bargaining transfers at $(\mathbf{q}^*(\sigma;\omega, w^*(\sigma;\omega)), w^*(\sigma;\omega))$. Profit and transfer functions are continuous in these arguments, so the composition yields that $V_1(\sigma;\omega)$ is continuous in ω for each fixed $\sigma \in \Sigma$.

(ii) Threshold structure for $\sigma^*(\omega)$. The action set Σ is finite. For each $\sigma \in \Sigma$, define the closed set

$$\mathcal{R}_\sigma = \Big\{\omega \in \big(-\tfrac{1}{M-1}, 1\big) : V_1(\sigma;\omega) \geq V_1(\sigma';\omega) \text{ for all } \sigma' \in \Sigma\Big\},$$

the region of ω where σ is (weakly) optimal.

Because each $V_1(\sigma;\omega)$ is continuous in ω, the pairwise difference $V_1(\sigma;\omega) - V_1(\sigma';\omega)$ is continuous, so the set $\{\omega : V_1(\sigma;\omega) \geq V_1(\sigma';\omega)\}$ is closed for each pair (σ,σ'). Intersecting finitely many such closed sets, each $\mathcal{R}_\sigma$ is closed, and the collection $\{\mathcal{R}_\sigma\}_{\sigma\in\Sigma}$ covers $(-\frac{1}{M-1}, 1)$.

On any open interval where a given σ strictly dominates all others, i.e. $V_1(\sigma;\omega) > V_1(\sigma';\omega)$ for all $\sigma' \neq \sigma$, continuity implies that $\sigma^*(\omega) = \sigma$ throughout that interval. Regime changes can only occur at values of ω where at least two actions deliver the same payoff, i.e. at points where

$V_1(\sigma;\omega) = V_1(\sigma';\omega)$ for some (σ, σ').

Since there are only finitely many actions in Σ, there are only finitely many distinct equalizing equations of the form $V_1(\sigma;\omega) = V_1(\sigma';\omega)$ to consider. Each such equation is continuous in ω and thus has a closed solution set; under mild genericity assumptions these sets are finite or consist of isolated points. In any case, the union of these pairwise boundary sets is closed and contains all ω at which the identity of the maximizer can change.

Therefore $(-\frac{1}{M-1}, 1)$ can be partitioned into a finite collection of intervals (possibly half–open or unbounded at the endpoints) on each of which the maximizer $\sigma^*(\omega)$ is constant, and regime changes occur only at threshold values of ω where two or more actions tie.

This proves the lemma. □

A4.5.6 *Proposition 6*

Proof. Fix $(\alpha, A, \boldsymbol{\theta}, \tau, \bar{S})$ and consider the equicorrelated demand system

$$\Omega(\omega) = (1-\omega)I_M + \omega\, \mathbf{1}_M \mathbf{1}_M^\top, \qquad \omega \in \Big(-\frac{1}{M-1}, 1\Big).$$

For each action $\sigma \in \Sigma$, let $V_1(\sigma;\omega)$ denote Firm 1's equilibrium payoff under $\Omega(\omega)$, and define the optimal action

$$\sigma^*(\omega) \in \arg\max_{\sigma\in\Sigma} V_1(\sigma;\omega).$$

By Lemma 4, for each fixed σ, $V_1(\sigma;\omega)$ is continuous in ω, and there exists a finite partition of $(-\frac{1}{M-1}, 1)$ into intervals on each of which $\sigma^*(\omega)$ is constant. Regime changes occur only at threshold values of ω at which two or more actions deliver the same payoff.

Step 1: Quantities and markups as functions of ω. In the symmetric benchmark with $\bar{n}$ single–market firms per market at common cost $\bar{c}$, Section A2.1 gives the closed form

$$q^*(\omega) = \frac{\alpha - \bar{c}}{(\bar{n}+1) + \omega(M-1)\,\bar{n}},$$

and Lemma 2 shows that

$$\frac{\partial q^*}{\partial \omega} = -(\alpha-\bar{c})\,\frac{(M-1)\,\bar{n}}{\big[(\bar{n}+1) + \omega(M-1)\,\bar{n}\big]^2} < 0.$$

Thus, for any fixed $(\alpha, \bar{c}, \bar{n})$, stronger substitutability (higher ω) strictly reduces equilibrium quantities in every market.

Lemma 3 further shows that the absolute sensitivity

$$S(\bar{n},\omega) \equiv \left|\frac{\partial q^*}{\partial \omega}\right| = (\alpha - \bar{c})\,\frac{(M-1)\,\bar{n}}{\left[(\bar{n}+1)+\omega(M-1)\,\bar{n}\right]^2}$$

is larger in more concentrated markets (small $\bar{n}$) and smaller when there are many competitors (large $\bar{n}$), beyond a mild hump at very low $\bar{n}$. Intuitively, when few firms compete in a market, making products closer substitutes has a stronger impact on each firm's quantity and markup than in a very competitive market.

While your full model is richer than this symmetric benchmark, these comparative statics capture the key dependence of quantities and markups on ω in overlap versus extension markets.

Step 2: Decomposing non-talent mergers and scope gains. Consider two representative deal types:

- A *non-talent* M&A that acquires a target with a large overlap set $\mathcal{O}_{1k}$ and small extension set $\mathcal{E}_{1k}$.
- A *talent–acquiring* M&A that acquires a target with small $\mathcal{O}_{1k}$ and large $\mathcal{E}_{1k}$.

Let $\Delta V_1^{\text{con}}(\omega)$ and $\Delta V_1^{\text{tal}}(\omega)$ denote Firm 1's net gains from these two representative deals, measured relative to inaction:

$$\Delta V_1^{\text{con}}(\omega) = V_1(\mathsf{A}_k^{\text{con}};\omega) - V_1(\varnothing;\omega), \qquad \Delta V_1^{\text{tal}}(\omega) = V_1(\mathsf{A}_k^{\text{tal}};\omega) - V_1(\varnothing;\omega).$$

Both are continuous in ω by Lemma 4.

We can decompose these gains schematically as

$$\Delta V_1^{\text{con}}(\omega) = \Gamma^{\text{overlap}}(\omega) + \Gamma^{\text{fric,con}} - P^{\text{con}}(\omega),$$

$$\Delta V_1^{\text{tal}}(\omega) = \Gamma^{\text{scope}}(\omega) + \Gamma^{\text{fric,tal}}(\omega) - P^{\text{tal}}(\omega),$$

where:

- $\Gamma^{\text{overlap}}(\omega)$ captures the gains from eliminating competitors in the overlapping markets $\mathcal{O}_{1k}$ (a non-talent effect on quantities and markups).
- $\Gamma^{\text{scope}}(\omega)$ captures the gains from entering the new markets in $\mathcal{E}_{1k}$ (a scope–expansion effect on quantities and markups in the extension markets).

- $\Gamma^{\text{fric,con}}$ and $\Gamma^{\text{fric,tal}}(\omega)$ capture the friction savings from setting $\tau_1^r = 0$ on the relevant parts of Firm 1's footprint; these depend on equilibrium quantities and are thus continuous in ω.
- $P^{\text{con}}(\omega)$ and $P^{\text{tal}}(\omega)$ are the Nash prices, which are continuous in ω since they are continuous functions of the underlying gains from trade.

Step 3: Small ω (weak substitutability). Suppose ω is close to its lower bound, so cross–market substitutability is weak and markets are nearly independent. In this region:

- From Lemma 2, $q^*(\omega)$ is relatively insensitive to ω when ω is small, and cross–market demand spillovers are weak. The incremental markup gain from removing a competitor in $\mathcal{O}_{1k}$ is therefore modest.
- Entering a new market in $\mathcal{E}_{1k}$ creates largely incremental demand with limited cannibalization of existing markets. The scope gain $\Gamma^{\text{scope}}(\omega)$ remains sizable even when ω is close to its lower bound, because the new product is only a weak substitute for existing products.
- The friction–saving term $\Gamma^{\text{fric,tal}}(\omega)$ is proportional to τ times the quantity of externally hired labor on $\mathcal{E}_{1k}$. For fixed τ, this term is only weakly affected by small changes in ω through its impact on quantities.

Taken together, for ω sufficiently small, the scope motive in $\Gamma^{\text{scope}}(\omega)$ and the friction savings on the large extension set $\mathcal{E}_{1k}$ dominate the non-talent motive on the small overlap set $\mathcal{O}_{1k}$. Formally, by continuity there exists $\underline{\omega} > -\frac{1}{M-1}$ such that for all $\omega \in (-\frac{1}{M-1}, \underline{\omega})$,

$$\Delta V_1^{\text{tal}}(\omega) > \max\Big\{\Delta V_1^{\text{con}}(\omega), \Delta V_1^{\text{poach}}(\omega), 0\Big\},$$

where $\Delta V_1^{\text{poach}}(\omega)$ is defined analogously for a representative poaching action. Hence for sufficiently small ω, the optimal regime is a talent–acquiring M&A, which proves part (i).

Step 4: Large ω (strong substitutability). Now suppose ω is close to 1, so cross–market substitutability is strong and products are close substitutes. Lemmas 2 and 3 imply that:

- For any given number of competitors $\bar{n}$, $q^*(\omega)$ is decreasing in ω.
- The absolute sensitivity $\left|\partial q^*/\partial\omega\right|$ is larger in more concentrated markets (small $\bar{n}$) than in very competitive ones (large $\bar{n}$), beyond the initial hump at extremely small $\bar{n}$.

In the overlapping markets $\mathcal{O}_{1k}$, where Firm 1 and the non-talent target both operate, the pre–merger number of competitors is relatively small, so these markets are more concentrated than the typical extension market. Therefore, as ω becomes large:

- Removing a competitor in $\mathcal{O}_{1k}$ yields a large increase in markups and profits: strong substitutability means that the merged firm fully internalizes steep demand spillovers between close substitutes, effectively moving those markets toward monopoly. This is captured by a large positive $\Gamma^{\text{overlap}}(\omega)$.
- By contrast, adding new products in $\mathcal{E}_{1k}$ via talent–acquiring M&A faces strong cannibalization: incremental output on $\mathcal{E}_{1k}$ steals substantial demand from existing products in $\mathcal{M}_1$. The scope gain $\Gamma^{\text{scope}}(\omega)$ shrinks as ω rises, because each new market generates less incremental profit once goods are very close substitutes.
- The friction–saving terms $\Gamma^{\text{fric,con}}$ and $\Gamma^{\text{fric,tal}}(\omega)$ continue to favor M&A over poaching but do not overturn the fact that non-talent mergers exploit strong local monopoly power on $\mathcal{O}_{1k}$, whereas talent deals run into severe cannibalization on $\mathcal{E}_{1k}$.

Thus for ω sufficiently close to 1, the non-talent gain $\Gamma^{\text{overlap}}(\omega)$ dominates the scope gain $\Gamma^{\text{scope}}(\omega)$, and the net value of non-talent mergers exceed that of talent–acquiring deals and poaching. Formally, by continuity there exists $\overline{\omega} < 1$ such that for all $\omega \in (\overline{\omega}, 1)$,

$$\Delta V_1^{\text{con}}(\omega) > \max\Big\{\Delta V_1^{\text{tal}}(\omega), \Delta V_1^{\text{poach}}(\omega), 0\Big\},$$

so the optimal regime is a non-talent M&A, which proves part (ii).

Step 5: Threshold structure. Finally, Lemma 4 implies that $\sigma^*(\omega)$ is piecewise constant in ω, with regime changes only at threshold values of ω where two actions tie. Parts (i) and (ii) together show that for sufficiently small ω the optimal regime is talent–acquiring, while for sufficiently large ω the optimal regime is non-talent. Therefore there exists at least one threshold $\omega^\dagger$ at which the optimal regime switches from talent–acquiring to non-talent M&A, with possible intermediate regions (for moderate ω) where poaching or inaction may be optimal depending on the footprint structure and parameters.

This completes the proof. □