Buying the Deposit Franchise: The Inalienability of Customer Capital in Banking

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Abstract

A young bank pays sixty-eight basis points more for deposits than an established neighbor in the same county, a gap that persists over a decade. This disadvantage reflects a missing local customer base. Purchasing an established branch is the natural way to acquire that base. Empirically, however, I find that a transferred branch loses about a fifth of its deposits relative to the buyer's pre-existing local offices. What leaves the branch is only partly reabsorbed in the county, and that reabsorption is not proportional to market shares—rejecting canonical discrete-choice deposit demand. The unreabsorbed remainder is a permanent loss: net of buyer absorption, fifteen to twenty-two percent of the depositor base does not survive the sale. The proportional loss is flat in seller tenure, indicating that what an ownership change severs is destroyed organization capital rather than reallocated balances. Extending the Wang et al. (2022) model to incorporate inalienable customer capital, I show that a branch is worth strictly less to any acquirer than to its incumbent, generating a buyer-invariant valuation wedge that peaks when the buyer holds no local presence. Applying the calibrated model, I show that when a failed bank's deposits are sold to a buyer with no local presence, 1.3 to 2.6 cents of franchise value are destroyed per deposit dollar, equal to four to seven percent of the average cost a bank failure imposes on the deposit insurance fund but recorded as zero in the official cost comparison. Forced branch sales after mergers lose customers the same way, so the buyer retains only 15.3 billion of the 23.0 billion required and delivers a third to a half less competition than the Department of Justice planned. These findings demonstrate that a deposit franchise is only partly buyable: customer capital does not transfer intact with ownership, and standard demand systems and regulatory valuations that treat the depositor base as fully transferable miss the loss.

Keywords: Deposit franchise, customer capital, branch sales, merger remedies, bank resolution, deposit demand

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1 Introduction

A bank in its first two years pays sixty-eight basis points more for its deposits than a bank over twenty years old lending into the same county in the same year. A young–old bank gap, as Figure 1 in Section 2.3 shows, remains after many years of county tenure: even after fifteen years, the premium is still roughly twenty-four basis points. This premium is not driven by macroeconomic fluctuations or regional disparities, because within the same county and year, young and old banks face the same pool of depositors and the same risk-free rate environment. Read as a cost of funds, the differential is economically meaningful: relative to an otherwise comparable old bank, a young bank funding $500 million of deposits at the 68-basis-point spread pays roughly $3.4 million a year in extra interest, and continues to pay something for more than a decade.[1] A persistent cost disadvantage of this form is difficult to reconcile with a competitive market for deposits.

A large literature attributes this disadvantage to the absence of an installed local customer base. Young banks lack established deposit relationships and therefore rely more heavily on expensive purchased funds while they build a core franchise (DeYoung and Hasan, 1998; DeYoung, 1999); related evidence outside banking shows that brand and demand capital accumulate only slowly with tenure (Bronnenberg et al., 2012; Foster et al., 2016). If the depositor base transferred whole with the office, purchasing an established branch—the natural way to acquire that missing customer capital—would narrow the funding gap. Therefore, this paper asks how much of a deposit franchise can be bought.

Beyond this question, a parallel theoretical tension concerns the alienability of the customer base as a form of intangible capital. Dou and Ji (2021) and Dou et al. (2021a) show that customer capital is a core intangible asset driving firm market power and markups, yet because firms in most industries are rarely disassembled, how much of it survives an ownership change is difficult to observe. Banking provides a clean laboratory: when a branch changes hands, the physical building, location, regulatory charter, and rate sheet are inherited. Building on the structural deposit demand framework of Wang et al. (2022), this paper incorporates the bank-specific customer capital of Dou and Ji (2021) and Dou et al. (2021a) and asks what incomplete transferability implies for the value of a branch when ownership changes.

I answer the first question empirically by exploiting a unique institutional feature of U.S. banking—rates are set at the bank level, not the branch level—to hold deposit rates fixed by construction and isolate the pure quantity effect of an ownership change. I then place the resulting measurement in a structural model that extends the spatial demand system of Wang et al. (2022) with inalienable customer capital, and I deploy the calibrated model to answer the

[1] That newly chartered banks face higher funding costs and lower profitability than established banks, converging only over a decade, is well documented; see, e.g., Hunter and Srinivasan, 1990; Brislin and Santomero, 1991; DeYoung and Hasan, 1998; DeYoung, 1999, 2003. Recent industry and regulatory reports reach a similar conclusion; see, e.g., Federal Reserve Bank of Kansas City (2024); FDIC, *2023 Annual Report*; and CSBS, "De Novo Banks".

second question and to quantify the consequences for antitrust enforcement and bank resolution.

I start the investigation through three empirical designs.

First, at the branch level, I compare an acquired branch to the buyer's pre-existing branches in the same county. Because U.S. banks post deposit rates at the regional tier rather than the individual branch, this within-buyer comparison holds management, brand, local economic conditions, and the posted rate sheet fixed by construction (Radecki, 1998; Heitfield, 1999). Holding the deposit rate fixed, a transferred branch loses roughly a fifth of its deposits (0.24 log points) within two years. Net of absorption at the buyer's other local offices, fifteen to twenty-two percent of the depositor base (up to thirty percent when weighted by dollar volume) does not survive the sale as a transferable franchise. Consolidation onto a nearby buyer office is unlikely as well: in 72 percent of clean transfers the buyer held no branch in the county beforehand, and matched county aggregates show that local branch counts do not fall while deposits in the rest of the county do not decline.

Second, I ask whether the loss is permanent and whether the proportional decline rises with seller tenure or branch age. Extending the window, about one fifth of the initial decline is undone over fourteen years and the rest remains, so the loss of deposits is permanent rather than temporary runoff. Splits by seller tenure and by branch age yield proportional losses that do not differ at conventional significance. That flat profile matches a constant multiplicative transfer rule; a past rate-setting accumulation story would instead raise the fraction lost as tenure lengthens. Absolute losses still grow with the pre-deal deposit base where runoff appears, so the flat proportional profile is not an artefact of looking only where there is little to lose.

Third, I track whether rivals in the same county pick up what leaves the office. Rival branches gain only +0.025 log points, and the gain does not rise with deal size. In high-intensity deals the estimate is +4.4 percent, about half the +9.5 percent that share-proportional reallocation would require. A standard discrete-choice deposit demand system predicts that deposits released by one branch reappear at competitors in proportion to existing market shares (e.g., Wang et al., 2022); the data reject that benchmark where it has power. A demand system with bank-specific customer capital fits the modest rival response better: part of the base is destroyed with the ownership change rather than released into the local market for rivals to reclaim.

These three facts establish that about one fifth of the depositor base is lost when a branch changes hands. The loss persists for more than a decade, is flat in seller tenure, does not reverse as temporary runoff would, and does not reappear at rivals in share proportions. Seller-retained branches do not absorb it.

I interpret the permanent loss as bank-specific customer capital and place the measurements in a quantitative model of local deposit competition. The framework keeps the discrete-choice demand system of Wang et al. (2022), in which branch demand depends on local branch counts and deposit rates, and adds a bank-specific customer stock that only partly survives a change of owner. With that addition, the model accounts for three facts that follow from incomplete

transferability. First, deposits fall at the transferred branch even though the buyer inherits the premises, network, and rate sheet. Second, rivals do not reabsorb what leaves the office in proportion to market shares. Third, a branch is worth strictly less to any acquirer than to its incumbent, generating a buyer-invariant valuation wedge that peaks when the buyer has no local presence. On the supply side, banks value locked-in relationships when setting deposit spreads, so purchasing a branch delivers a large share of a mature base yet leaves a residual that does not travel with the office: what remains is not that a deposit franchise cannot be bought, but that it cannot be bought whole.

The wedge is distinct from fire-sale misallocation (Granja et al., 2017): it arises from replacing the owner, not from selling an intact franchise to a capital-constrained or lower-quality acquirer. That creates a policy tension, because the out-of-market buyer that destroys the largest fraction of the franchise is the buyer type antitrust remedies and failed-bank resolutions are designed to select.

To deploy the framework for policy analysis, I calibrate the model's transfer primitives and validate them against held-out empirical moments. I first apply the calibrated model to thirteen major branch divestiture orders mandated by the Department of Justice to clear bank mergers, covering over five hundred branches and twenty-three billion dollars in deposits. Because antitrust orders mandate selecting buyers without local overlap and forbid the merging parties from soliciting former customers, they eliminate network absorption channels and force the divested base to travel under worst-case conditions. The model shows that while these remedies were written and scored to create new competitors holding over nine percent of county deposits, they actually delivered just six percent—a permanent capacity loss of over thirty percent, delivering fifteen billion dollars rather than the intended twenty-three billion. Moreover, standard Herfindahl concentration screens are structurally blind to this failure: because detached deposits largely remain within the local county, post-sale market concentration barely shifts, allowing the remedy to pass its own regulatory test while failing to deliver its promised competitive scale. To create a competitor of the intended size, agencies would need to gross up required divestitures by twenty-eight to fifty-one percent, enlarging requirements further when buyers lack local networks.

In a second application, I quantify the franchise-value loss in FDIC failed-bank resolutions, where the statutory least-cost test evaluates purchase-and-assumption bids under the presumption that core deposit franchises transfer without loss. Adopting standard aggregate deposit valuations (Drechsler et al., 2026), I find that transferring a failed bank to a typical out-of-market acquirer destroys between 1.3 and 2.6 cents of franchise value per deposit dollar. This unmeasured destruction accounts for four to seven percent of the average total cost a bank failure imposes on the deposit insurance fund—a substantial loss currently recorded as zero in statutory evaluations. Two structural features exacerbate this misvaluation. First, because deposit franchise value expands as interest rates rise, franchise destruction peaks in high-rate

environments, exactly when bank failures cluster. Second, because in-market bidders can reabsorb detached accounts through their existing branches while out-of-market acquirers cannot, scoring bids purely on quoted nominal premiums tilts the least-cost comparison against local buyers who would preserve greater franchise value.

Taken together, the evidence and model show that a deposit franchise is organization capital embodied in the bank that assembled it, not a fully alienable asset. A deposit base can be bought, and most of it survives the sale—which is why branch purchase serves as a genuine, cost-effective alternative to organic building. Yet because the franchise cannot be conveyed whole, a non-transferable residual is destroyed in the sale rather than passed to the buyer. Ultimately, where regulatory policy relies on the deposit franchise being conveyed whole—namely, in structuring antitrust remedies to restore competition and evaluating bank resolutions to minimize fund losses—these findings call for a more prudent framework that explicitly accounts for partial customer detachment rather than assuming seamless transferability.

Related Works. This paper sits at the intersection of three literatures. The first is the structural analysis of deposit demand and bank market power (Dick, 2008; Ho and Ishii, 2011; Egan et al., 2017; Wang et al., 2022; Buchak et al., 2024; Jiang et al., 2026). In the canonical discrete-choice systems of this literature, a branch is a unit of local branch capacity whose deposits move one-for-one with its owner whenever the posted yield and local branch count are inherited. I retain that demand block and the institutional fact that U.S. deposit rates are set above the branch, but I reject the maintained alienability of the depositor base: a within-buyer ownership change that holds the rate sheet fixed permanently reduces deposits at the transferred office, and rivals do not absorb the loss in the share-proportional way the logit reallocation restriction requires. Closely related work on the deposits channel and franchise value (Drechsler et al., 2017, 2026; Jiang et al., 2024) shows that the present value of below-market deposit funding is large and that it can vanish when depositors leave. Those papers take the stock of relationships as given and study its risk; I measure how much of that stock survives a change of owner.

The second literature is customer capital and organization capital (Gourio and Rudanko, 2014; Eisfeldt and Papanikolaou, 2013; Dou and Ji, 2021; Dou et al., 2021a,b), with roots in inalienable human capital (Hart and Moore, 1994) and deep habits (Phelps and Winter, 1970; Ravn et al., 2006). That work posits that an installed base is partly bank-specific and is scaled by a multiplicative haircut when key personnel or the operating unit departs, but it typically assumes that severed customers are recaptured elsewhere and calibrates the surviving fraction rather than estimating it in a local market. I import the multiplicative technology into a spatial banking demand system, identify the surviving share from branch sales, and show that proportional rival recapture fails in the data. Evidence that brand and demand capital accumulate slowly with tenure (Bronnenberg et al., 2012; Foster et al., 2016) supplies the complementary fact that motivates the young-bank deposit premium I start from; my contribution is to isolate

how much of the accumulated base can be purchased rather than rebuilt.

The third literature studies bank sales, failed-bank resolution, and merger remedies (James and Wier, 1987; James, 1991; Granja et al., 2017; Pilloff, 2005; Liebersohn, 2024). Granja et al. (2017) show that failed-bank franchises are often sold to distant buyers who destroy value relative to a local allocation; the friction is misallocation of an intact franchise. My friction is different: even when the buyer is unconstrained and already present in the county, a fixed fraction of the depositor base does not survive the conveyance. Work on antitrust divestitures documents what happens to rates and concentration when overlapping offices are forced out (Pilloff, 2005; Liebersohn, 2024); I show that scoring those remedies by booked deposits systematically overstates the competitive capacity delivered, because the non-transferable residual is largest precisely when the buyer has no local network to absorb detached depositors—the remedy case. Finally, evidence that de novo and young banks underperform and pay more for funds (DeYoung and Hasan, 1998; DeYoung, 1999) is the reduced-form counterpart of the entry premium I document; my contribution is to measure how much of an accumulated depositor base can be purchased rather than rebuilt.

The rest of the paper proceeds as follows. Section 2 sets out the institutional background, the data and sample construction, and the two facts that motivate the analysis. Section 3 presents the reduced-form evidence that disciplines the model. Section 4 develops the franchise model and establishes what a branch transfer identifies. Section 5 estimates the demand system, inverts the moments and takes the result out of sample. Section 6 concludes.

2 Background, Data, and Motivation

2.1 Background

A bank's local deposit business is an installed base of household and firm relationships that return stable balances each period without re-acquisition costs. Banks treat this customer capital as an asset: they buy and sell individual offices, branch packages, and entire institution networks to adjust geographic footprint. In a branch transaction the buyer acquires the premises and location, assumes the booked deposit liabilities, and places the accounts under its own charter, deposit insurance, brand, management, and posted rate sheet. The conveyance does not settle how much of the depositor base remains attached to the office once the incumbent leaves. This paper measures that residual through branch deposits, the standard metric for the local deposit franchise (Wang et al., 2022; Drechsler et al., 2026).

Two features of U.S. banking structure the measurement. First, banks do not set deposit rates office by office. They post uniform rate sheets over regional tiers that span metropolitan areas or states (Radecki, 1998; Heitfield, 1999), so offices of the same bank in the same county share a rate sheet. Within-buyer designs can therefore hold the deposit rate fixed by construction. Second, local expansion takes two routes. Opening a new office builds a depositor base

from zero; purchasing an existing office delivers an established base on day one. Ownership changes arrive through commercial branch sales, merger-related divestitures, and failed-bank purchase-and-assumption resolutions administered by the FDIC. The designs below use ownership changes recorded in regulatory filings across these channels.

Two policy settings treat the depositor base as traveling with the office. When the Department of Justice clears a bank merger by ordering branch divestitures, the remedy is scored on booked deposits at the transferred offices. The typical order selects an acquirer without local overlap and forbids the merging parties from soliciting or transferring the divested customers, so network reabsorption is shut down by design. When the FDIC resolves a failed bank through a purchase-and-assumption transaction, the statutory least-cost test evaluates bids under the presumption that core deposit franchises transfer without loss, and the winning acquirer is often without a local presence. Both settings therefore treat the franchise as fully alienable where the buyer's capacity to retain detached depositors is weakest, the cases the quantitative applications return to.

The remainder of this section describes the data and samples and presents two motivating facts. Section 3 then reports reduced-form evidence on deposit dynamics after ownership changes.

2.2 Data and Sample Construction

The primary data source is the FDIC Summary of Deposits (SOD), which reports annual June 30 branch-level deposit balances, establishment dates, locations, and ownership identities for every insured U.S. institution from 1994 through 2024. The panel covers 2.7 million branch-years across 151,466 branches in 3,229 counties. Ownership changes are identified from the full longitudinal sequence of branch ownership, not from regulatory transfer flags alone. Because 31,431 branches change hands more than once, the sequence keeps later resales from contaminating the estimation window around an earlier transfer.

Bank-level financial variables and interest expenses come from quarterly Call Reports aggregated annually. The all-in deposit rate is total domestic deposit interest expense divided by total domestic deposits. Following Wang et al. (2022), the deposit yield used in demand estimation nets service fees from the posted rate relative to the federal funds rate. Both metrics are bank-wide, as required by the regional rate-tiering structure in Section 3.2.4.

I construct three estimation samples, summarized in Table 1: a branch-level panel around ownership transfers; a county-level panel of matched treated and control pairs; and a bank–county–year panel for structural demand estimation. In the transfer design, the median acquired branch holds $37 million in deposits in a median county market of $231 million. The transferred bundle is 17 percent of local county deposits at the median, large enough to matter locally and still leave room to study reabsorption in Section 3.2.2.

Identification in the branch and county panels uses stacked difference-in-differences across

Table 1: Summary Statistics

	Median	Mean	sd	IQR	IDR
Panel A. Transfer design, branch × cohort × year					
Branch deposits ($m)	37.4	79.6	854.4	50.1	114.7
Log branch deposits	10.53	10.46	1.17	1.28	2.60
Transferred branch (0/1)	1.00	0.69	0.46	1.00	1.00
Observations			652,493		
Panel B. County design, county × cohort × year					
County deposits ($m)	231	364	984	277	614
Branches in the county	7.0	8.6	6.6	7.0	13.0
Transferred bundle, share of county	0.168	0.219	0.186	0.240	0.463
Observations			47,065		
Panel C. Demand estimation, bank × county × year					
Deposit share in the county	0.0387	0.0749	0.0998	0.0909	0.1942
Deposit yield (%)	-0.64	-0.99	1.34	1.68	3.55
Branches in the county	2.0	3.5	7.1	2.0	6.0
Bank age (years)	99.0	94.8	44.8	62.0	127.0
Years in the county	10.0	11.6	8.0	12.0	21.0
Bank assets ($m)	1,446	182,332	542,251	33,501	461,164
Observations			621,571		

Note: IQR is the difference between the seventy-fifth and twenty-fifth percentiles; IDR is the difference between the ninetieth and tenth. Deposits are as reported in the FDIC Summary of Deposits on 30 June and are converted to millions of dollars.

Panel A: 46,145 transferred and 20,465 comparison branch-cohorts; 2,492 buyers, measured at $e = -1$. Only branches whose owner is unchanged across the eleven-year window enter the comparison group.

Panel B: 2,096 treated and 2,183 comparison county-cohorts; 2,038 counties, measured at $e = -1$. Comparison counties see no branch transfer anywhere in the window and are matched within cohort on deposits, branches, banks, concentration and pre-period growth.

Panel C: 10,336 banks; 3,081 counties. The deposit yield is constructed from the Call Reports as in Wang et al. (2022) and is a bank-wide figure; see Section 3.2.4.

half-year transfer cohorts $ty \in [1999, 2019]$. Each cohort is observed over an eleven-year window centered on the transfer date, with $e = -1$ as the omitted base period. Control branches are offices whose ownership is stable throughout that window. In the county design, treated counties with branch sales are matched within cohort to no-transfer counties on pre-period market scale, banking structure, and deposit growth. The demand panel tracks bank tenure bins within counties to measure market-specific accumulation.

2.3 Motivating Facts

An entrant into a county can build a deposit franchise or buy one. Two facts motivate the designs that follow. Young banks pay higher deposit rates than established incumbents in the same local market, and that premium is paid almost entirely by institutions that entered organically rather than by acquisition.

2.3.1 The Deposit Premium Paid by Young Banks

Young banks pay higher deposit rates than established incumbents in the same county and year. Table 2, Panel A, reports the profile. In its first two years, a bank pays 68 basis points above an incumbent over twenty years old. The gap decays slowly: 61 basis points in years two and three, 53 in years four and five, and 30 for banks aged eleven to twenty. County-by-year fixed effects hold local market conditions, competitor networks, and the risk-free rate environment fixed. Adding log assets leaves four fifths of the premium intact, so the gap reflects operational age more than institution size.

Figure 1 plots year-adjusted all-in deposit rates by years of county tenure for young banks (aged fifteen or under) and established banks (older than twenty). The trajectories do not converge. The gap is widest at entry and remains about 24 basis points after fifteen years in the county.

At a funding scale of $500 million, the 68-basis-point spread costs about $3.4 million a year in extra interest. The question for what follows is how much of an established depositor base travels with a purchased branch.

2.3.2 Two Routes into a Local Market

Entrants open de novo branches or acquire existing ones. Both routes are common in U.S. banking, and acquisition is the larger of the two: of 44,614 observed county entries in the SOD, 25,662 occur via branch purchase and 14,755 via de novo opening.[2] The two routes leave banks in different quantity and deposit-rate positions.

[2] A county entry is defined as an observed bank–county spell whose initial year appears in the SOD, excluding spells underway in 1994. An entry is classified as acquired if at least half of the entrant's initial county deposits sit in purchased offices, and as organic if offices were established de novo. A total of 4,197 unclassified entries lacking branch dates are excluded.

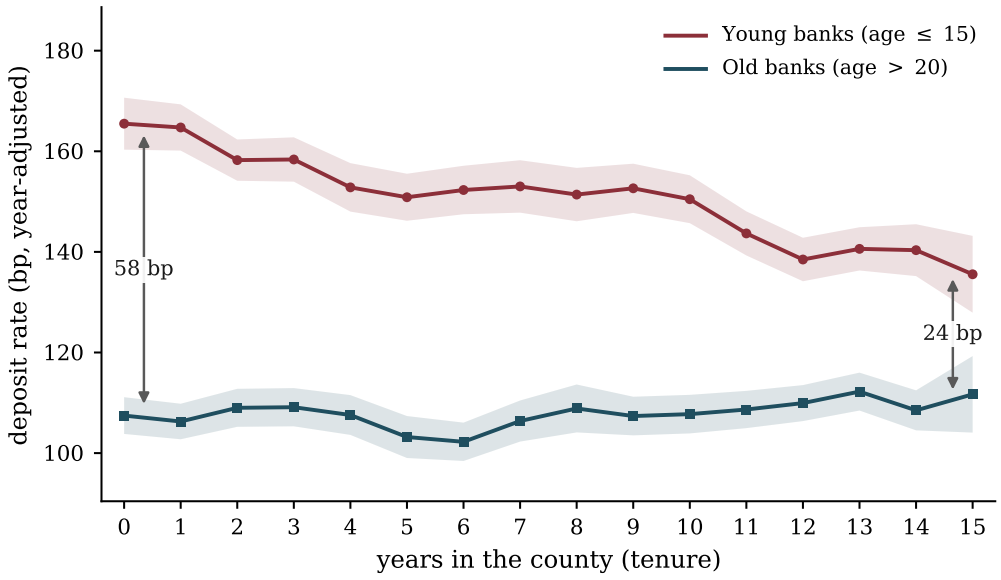


Figure 1: Young banks pay higher deposit rates. Year-adjusted all-in deposit rates (Call Reports, basis points) by years of county tenure. Young banks are aged at most fifteen years; old banks are older than twenty. The young–old gap remains large after fifteen years in the market.

Table 2: The Entrant's Deposit Premium

Panel A. By bank age			*Panel B. By route into the county*		
Age	(1)	(2)	Years in county	Acquired	Organic
0–1	67.9***	53.9***	0–1	6.7***	24.7***
	(8.9)	(8.0)		(0.7)	(1.3)
2–3	61.1***	50.0***	2–3	4.3***	24.9***
	(7.3)	(5.1)		(0.7)	(1.3)
4–5	53.0***	42.8***	4–5	2.9***	22.8***
	(7.6)	(5.5)		(0.7)	(1.2)
6–10	42.5***	32.9***	6–10	−0.9	20.2***
	(6.0)	(4.2)		(0.7)	(1.2)
11–20	30.4***	21.9***	11–20	0.5	20.4***
	(3.4)	(2.2)		(0.6)	(1.0)
			20+	1.5**	9.7***
				(0.6)	(1.0)
County × Year FE	YES	YES		YES	YES
log assets	NO	YES		NO	NO
Observations	465,661	465,661		617,932	

Note: The dependent variable is the bank's all-in deposit rate in basis points, interest expense on deposits divided by deposits, from the Call Reports. County × year effects absorb the local rate environment, so each coefficient compares banks lending into the same county in the same year. The omitted category is banks over twenty years old in Panel A and banks present in the county over twenty years in Panel B.

Panel A is clustered on the bank. Column (2) adds log assets so that the tenure profile is not confounded with size.

Panel B splits on how the bank first came to operate in that county. "Acquired" means its first presence there was a purchased branch; "Organic" means it opened one. Coefficients are relative to an acquired entrant present over twenty years; the organic column is the sum of the tenure effect and its interaction with the route. Standard errors are clustered on the bank-county pair.

* $p < .10$, ** $p < .05$, *** $p < .01$.

Holding local branch counts and posted rates fixed, an entrant that purchases established branches immediately secures 59 percent of the mature deposit share it will eventually hold in that county; an entrant that opens branches de novo begins at 8.8 percent. The 2.19 log point gap closes slowly.[3]

Table 2, Panel B, splits deposit rates by entry route. An acquirer pays a 7 basis point premium over incumbents in its first two years, and the gap disappears within six to ten years. An organic entrant pays 25 basis points at entry and still pays 20 a decade later. The persistent premium in Section 2.3.1 is therefore borne mainly by banks that built their customer base rather than bought it.

Purchase therefore conveys a large share of customer capital: three fifths of a mature market position and most of the entry rate premium. It does not convey the franchise whole, because the acquired position is not immediately mature. The designs that follow ask how large that residual is when a branch changes hands, holding location, physical capacity, regulatory charter, and the new owner's rate sheet fixed.

3 Empirical Evidence

The analysis proceeds through three designs, ordered by how tightly each holds the environment fixed. The first compares a transferred branch with branches of the same bank in the same county. The second asks whether the county as a whole lost deposits. The third asks whether competitors gained.

3.1 Research Design

All three designs share the stacked cohort window above. A branch enters a comparison group only if its owner is unchanged across the entire window.

3.1.1 Transferred Branches

For branch b in cohort g and year t,

$$\log D_{bgt} \;=\; \sum_{k=-5,\,k\neq -1}^{5} \beta_k \left(\text{Transferred}_{bg} \times \mathbf{1}[e_{bgt} = k]\right) \;+\; \eta_{bg} \;+\; \tau_{c(b)tg} \;+\; \upsilon_{o(b)} \;+\; \varepsilon_{bgt}, \quad (1)$$

where D_{bgt} is branch deposits, $e_{bgt} = t - ty_g$ is event time, η_{bg} is a branch $\times$ cohort effect, τ_{ctg} is a county $\times$ year $\times$ stack effect, and $\upsilon_{o(b)}$ is an effect for the bank that owned the branch

[3]Results are estimated from a regression of log county deposit share on tenure bins interacted with entry route, controlling for log branch counts and absorbing bank $\times$ year and county $\times$ year fixed effects across 517,341 bank–county–years. The bank $\times$ year effect absorbs posted rates, identifying the share profile holding the deposit rate fixed. Relative to an incumbent with over twenty years' tenure, an acquired entry stands at -0.525 (0.019) log points in year one, while an organic entry sits a further -2.190 (0.030) log points lower.

at $ty-1$. Transferred$_{bg}=1$ for branches that change hands at ty_g and 0 for the comparison branches: the same buyer's other branches in the same county and, on the seller side, the same seller's retained branches there. Standard errors are two-way clustered on both parties to the transaction.

Because treatment is assigned at the branch level, the county × year effect is admissible, and every comparison sits inside one county in one year. Treated and comparison branches share management, brand, the rate sheet, the branch network, the regulator, and the local deposit market. The single difference is that one carries a customer base assembled under a previous owner. β_k is therefore the part of a branch's deposits attached to the owning bank rather than to the location or the product.

3.1.2 County Aggregates

At the county level, for county c in cohort g,

$$\log Y_{cgt} \;=\; \sum_{k=-5,\,k\neq-1}^{5} \gamma_k \left(\mathrm{Acq}_{cg} \times \mathbf{1}[e_{cgt}=k]\right) \;+\; \eta_{cg} \;+\; \tau_{s(c)tg} \;+\; \varepsilon_{cgt}, \tag{2}$$

where Y_{cgt} is either county deposits excluding the transferred branches or the county branch count, and τ_{stg} is a state × year × stack effect. Treatment is assigned at the county level, so county × year effects would absorb it and time effects can go no finer than the state; standard errors cluster on the county. Comparison counties see no transfer anywhere in the window and are matched within cohort on log deposits, log branches, log banks, the Herfindahl index, and pre-period growth at $ty-2$ (2,184 pairs; worst standardized difference $1.33 \to 0.22$).

If deposits shed by a transferred branch leave the local banking system, untreated branches are unaffected and $\gamma_k=0$ for the first outcome. A positive γ_k means the rest of the county absorbed the deposits. The second outcome tests consolidation directly: folding depositors onto an existing branch requires closing branches.

3.1.3 Rival Branches

Each observation is a rival branch whose owner is neither the buyer nor the seller and which does not itself change hands:

$$\log D_{bgt} \;=\; \sum_{k=-5,\,k\neq-1}^{5} \beta_k \left(\mathrm{AcqCounty}_{bg} \times \mathbf{1}[e_{bgt}=k]\right) \;+\; \eta_{bg} \;+\; \tau_{s(b)tg} \;+\; \upsilon_{o(b)} \;+\; \varepsilon_{bgt}. \tag{3}$$

Comparison branches sit in the matched no-transfer counties of Section 3.1.2. Treatment is again at the county level, so clustering is on the county. Slopes are β_k as in (1); fixed effects (η, τ, υ) avoid colliding with α, λ, μ and δ.

If competitors recapture the deposits shed by acquired branches, the rival response β must scale with how much deposit changed hands. Writing s for the transferred bundle's share of county deposits and $\zeta = 0.739$ for the sampled rivals' share, full reallocation of a 20% branch-level loss requires

$$\frac{\partial \beta}{\partial s} = \frac{0.20}{\zeta} = 0.271, \tag{4}$$

which across intensity terciles ($\bar{s} = 0.036, 0.138, 0.350$) means +1.0%, +3.7% and +9.5%.

3.2 Empirical Results

3.2.1 Deposits at a Branch That Changes Hands

Figure 2 and Table 3 report the estimates. The acquired branch loses 0.172 log points in the transfer year, 0.230 the year after, and settles at −0.241, with a 95% confidence interval of $[-0.305, -0.178]$, flat from $e = +1$ through $e = +5$. The seller-side mirror troughs at −0.221 and recovers to −0.052 by five years. The seller's retained branches are themselves deteriorating, so the buyer-side comparison is the cleaner of the two.

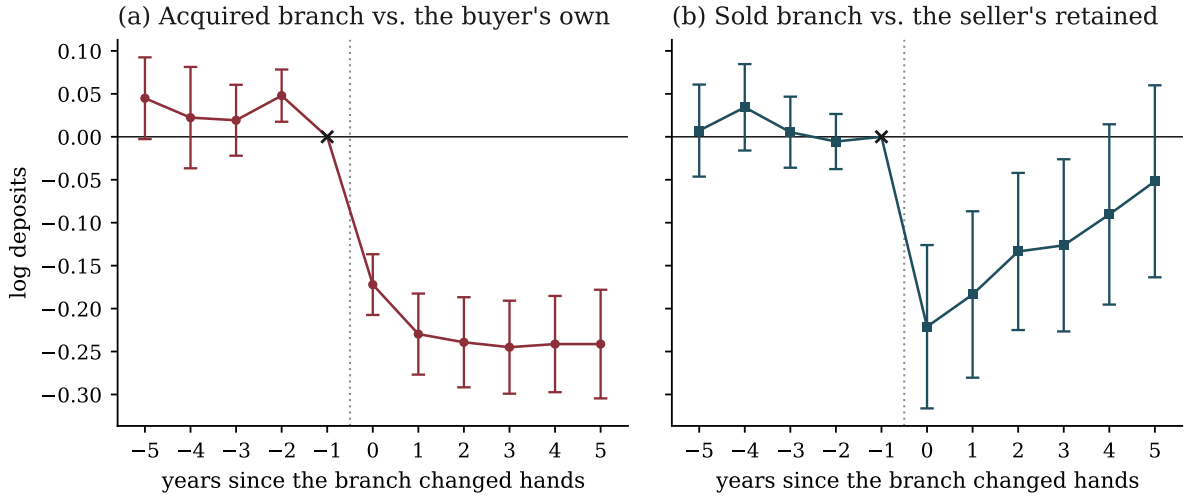


Figure 2: Deposits at a branch that changes hands. Event-study coefficients from equation (1) with $e = -1$ omitted, marked by a cross. Panel (a) compares an acquired branch with branches the same buyer already held in the same county; panel (b) compares a sold branch with branches the same seller kept there. Bars are 95% confidence intervals from two-way clustering on both parties to the transaction. Panel (a): 600,997 observations, buyer × seller clusters 2,087 × 5,793, $F(2, 2086) = 7.63$ on $e = -3, -2$ (branch fixed effect discussed in the text). Panel (b): 488,023 observations, seller × buyer clusters 4,629 × 2,812, $F(2, 2811) = 0.25$, $p = 0.78$.

Consolidation onto a nearby buyer branch is unlikely: in 72% of clean transfers the buyer held no branch in that county beforehand (Table B9, Panel A), and branch counts do not fall (Section 3.2.2). Controlling for the current owner's deposit rate moves the coefficient at $e = +4$

Table 3: Deposits at a Branch That Changes Hands

	Acquired branch			Sold branch		
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable	log(branch deposits)					
Transferred × Post	-0.240^{***}	-0.250^{***}	-0.250^{***}	-0.138^{***}	-0.152^{***}	-0.152^{***}
	(0.027)	(0.025)	(0.025)	(0.022)	(0.042)	(0.042)
Comparison group	buyer's own branches, same county			seller's retained branches, same county		
Branch × Cohort FE	YES	YES	YES	YES	YES	YES
Year × Stack FE	YES	NO	NO	YES	NO	NO
County × Year × Stack FE	NO	YES	YES	NO	YES	YES
Previous-owner FE	NO	NO	YES	NO	NO	YES
Adjusted R^2	0.864	0.878	0.876	0.857	0.876	0.874
Observations	652,415	600,997	600,997	487,832	428,965	428,965
Clusters	2,492	2,087	2,087	5,969	4,629	4,629

Note: A branch-year panel stacked on 21 half-year transfer cohorts, $ty \in [1999, 2019]$, with an eleven-year window around each. Post = $\mathbf{1}[e \geq 0]$. Treated branches change hands exactly once inside the window; comparison branches keep the same owner throughout. Because treatment is assigned at the branch level, county × year effects are available and every comparison in columns (2), (3), (5) and (6) sits inside one county in one year. Standard errors are two-way clustered on both parties to the transaction: buyer × seller in columns (1)–(3), seller × buyer in columns (4)–(6).
The seller-side coefficient averages a path that troughs at -0.221 in the transfer year and recovers to -0.052 by $e = +5$; the acquired-branch path is flat from $e = +1$ onward (Figure 2).
* $p < .10$, ** $p < .05$, *** $p < .01$.

from -0.193 to -0.191 (Table B4), so the loss is not a deposit-rate effect. Brand is also a poor fit: 94.0% of clean transfers with a measured size ratio are a larger bank buying a smaller one, at a median of 4.3× its national branch count (Table B9, Panel B), which would predict the opposite sign.

Two qualifications apply. First, the pre-period coefficients in panel (a) are positive and jointly rejected ($F(2, 2086) = 7.63$). That pattern is arithmetic rather than selection: a branch fixed effect sweeps out a mean covering six post-transfer years at -0.24 and pushes the pre-period up to compensate. Normalizing on $e \in [-5, -4]$ instead leaves those two periods at -0.001 and -0.004 with $F = 0.04$ and the estimate unchanged at -0.246. Second, because the comparison group is the buyer's own branches, equation (1) is identified only where the buyer already operated in the county. That subsample is about one quarter of transfer county–years and sits in thicker markets than the typical deal (Table B9). The estimate is internally valid there. For transfers without buyer prior presence, a stacked comparison to matched no-transfer counties still shows a deposit loss of about -0.13 at a five-year horizon (Table B10), the same sign as the within-buyer design, at a smaller magnitude, and not used to recalibrate χ. Appendix B reports both exercises and the remaining supporting estimates by estimand: specification and sample checks that keep the transferred-branch treatment fixed (Tables B1–B2), the owner's deposit rate as a control (Table B4), contamination of the comparison group and voluntary pipe A absorption by local density (Tables B5 and B6), institutional loss metrics that bridge to Appendix C (Table B7), and rival responses including the intensity split (Table 8).

The design delivers two moments for estimation and a third fact that constrains functional

form. The within-buyer loss is about a fifth of deposits; once buyer-side absorption is netted out, the destroyed share sits between fifteen and twenty-two percent (Table 4). That interval is the share of the deposit base a model must treat as bank-specific rather than location-specific.

Table 4: Bounding Non-Transferability

	(1) Transfer loss	(2) Buyer absorption
Dependent Variable	log(branch deposits)	
Panel A. Estimated components at $e = +5$		
$e = +5$	-0.243^{***}	0.079^{***}
	(0.033)	(0.029)
Treated units	Acquired branches	Buyer's other branches
Comparison group	Buyer's own, same county	Matched no-transfer counties
Branch × Cohort FE	YES	YES
County × Year × Stack FE	YES	NO
State × Year × Stack FE	NO	YES
Bank FE	NO	YES
Previous-owner FE	YES	NO
Adjusted R^2	0.876	0.934
Observations	600,997	201,858
Clusters	2,087	1,096
Cluster level	Buyer × seller	County
Panel B. Bounds on the non-transferable share		
	(1) Upper bound	(2) Net of absorption
$\Delta \log D$	-0.243^{***}	-0.164^{***}
	(0.033)	(0.044)
$1 - \widehat{\chi} = 1 - \exp(\Delta \log D)$	0.216	0.151
Source of $\Delta \log D$	Panel A, column (1)	Panel A, (1) + (2)
Informative range	$1 - \chi \in [0.151, 0.216]$	

Note: Panel A reports two stacked event-study coefficients at $e = +5$. Column (1) is the within-buyer DiD: acquired branches versus the buyer's other branches in the same county (Table 3). Column (2) estimates whether those comparison branches gain after the deal, relative to matched counties with no transfer. Because $\Delta \log D_{\text{A(1)}} = \Delta \log D_{\text{acquired}} - \Delta \log D_{\text{buyer-own}}$, a positive Panel A column (2) implies that column (1) overstates destruction relative to a net-of-absorption reading.
Panel B maps log gaps into $1 - \chi = 1 - e^{\Delta \log D}$. Column (1) uses the unadjusted DiD and is an upper bound. Column (2) uses the net-of-absorption loss $\Delta \log D_{\text{net}} = -0.243 + 0.079 = -0.164$. Seller-retained branches against quiet counties are reported for reference (+0.031 (0.047)) on a clean pre-period.
Standard errors in parentheses. The Panel B column (2) standard error treats Panel A columns (1) and (2) as independent. * $p < .10$, ** $p < .05$, *** $p < .01$.

Extending the window, the coefficient runs from -0.207 at $e = +1$ to -0.162 at $e = +15$. About one fifth of the initial decline is undone over fourteen years; the rest remains. On any horizon over which a bank plans, that is a permanent deposit loss rather than a slow recovery.

The third moment separates the proportional technology from the level of the stock. The transfer coefficient is an elasticity: under a technology that scales the installed base by a constant χ, log deposits fall by $-\log \chi$ regardless of how large the base was. Whether that base is larger at long-tenured banks is a different question, answered by the within-bank-year county-tenure

share profile in Table 5 rather than by the transfer split. Splitting transfers on how long the seller had operated the branch, at medians of 3, 6 and 12 years, gives −0.285, −0.207 and −0.229; splitting instead on branch age, at medians of 5, 21 and 69 years, gives −0.292, −0.203 and −0.216. No pair differs at conventional significance levels. The proportional loss is flat in tenure, the prediction of a constant χ and a rejection of a past rate-setting accumulation narrative in which longer deposit-rate history would raise the *fraction* destroyed at sale (Table B2). The same within-buyer design, with terciles formed on treated deposits only and all of the buyer's other county branches retained as controls, gives $e = +5$ estimates of +0.155, −0.286 and −0.505 across size terciles; the implied absolute loss $(1-e^{\hat{\beta}})D_{-1}$ at the treated medians is about $8 million and $31 million in the upper two terciles (Table B3). Absolute destruction therefore scales with the base where runoff appears; the tenure-flat proportional null is not an artefact of looking only where there is little to lose.

Table 5: The County-Tenure Deposit Share Profile

	(1)	(2)
	θ_k	
Dependent Variable	log(deposit share)	
Tenure 0	−1.446	−1.446
Tenure 1	−1.046	−1.046
Tenure 2	−0.839	−0.839
Tenure 3–4	−0.681	−0.681
Tenure 5–7	−0.531	−0.531
Tenure 8–12	−0.387	−0.387
Tenure 13–20	−0.208	−0.208
Bank × Year FE	YES	YES
County × Year FE	YES	YES

Note: The deposit rate is constant within a bank-year and is absorbed entirely by the bank × year effect, so θ_k is identified from the same bank, in the same year, across counties it has served for different lengths of time. A bank in its first year in a county holds 1.446 log points less deposit share than one established beyond twenty years, at the same deposit rate and the same local branch count. An entrant therefore begins at $\exp(-1.446) = 0.24$ of the established level (Section 4.4). Tenure over 20 years is the omitted category.

Wang et al. (2022) model a market of $\hat{J} = 6$ symmetric representative banks, fixed and ex ante identical, with no birth and no death. Deposit demand is a random-coefficient logit whose characteristics are the deposit rate, log branches, log employees per branch, bank effects, and year effects. There is no bank age, no branch history, no switching or search friction, and no notion of a depositor attached to an owning bank rather than to a product. In that model a branch is a unit of local branch capacity: transfer it and its deposits transfer with it, because demand depends only on the branch count and the deposit rate, both of which the buyer inherits. Equation (1) estimates the residual that construction sets to zero.

Dou and Ji (2021) treat customer base as one of two endogenous state variables and set markups to trade off harvesting locked-in customers against investing in future ones, following the customer-market mechanism of Phelps and Winter (1970). The evidence supports that state-variable structure: the deposit base is a stock, it is firm-specific, and severing the firm destroys a fixed fraction of it. What it rejects is a particular accumulation claim on the *transfer* margin: if the stock were built by past deposit rates, longer rate-setting history should raise the fraction lost when the owner is replaced, yet the proportional loss is flat in tenure. The level of the stock may still rise with service; that is the tenure share profile, not the transfer elasticity. The open question is what replenishes the level of M (relationships, service quality, or something other than the deposit rate), not whether a constant-χ technology can be flat in tenure.

3.2.2 Where the Deposits Go

Figure 3 and Table 6 report the estimates. The county excluding the transferred branches gains 0.028 log points by $e = +5$, with a 95% confidence interval of $[0.010, 0.046]$. The branch count does not fall; the point estimate is a slight rise (+0.008). Deposits stay in the county, and branches do not close.

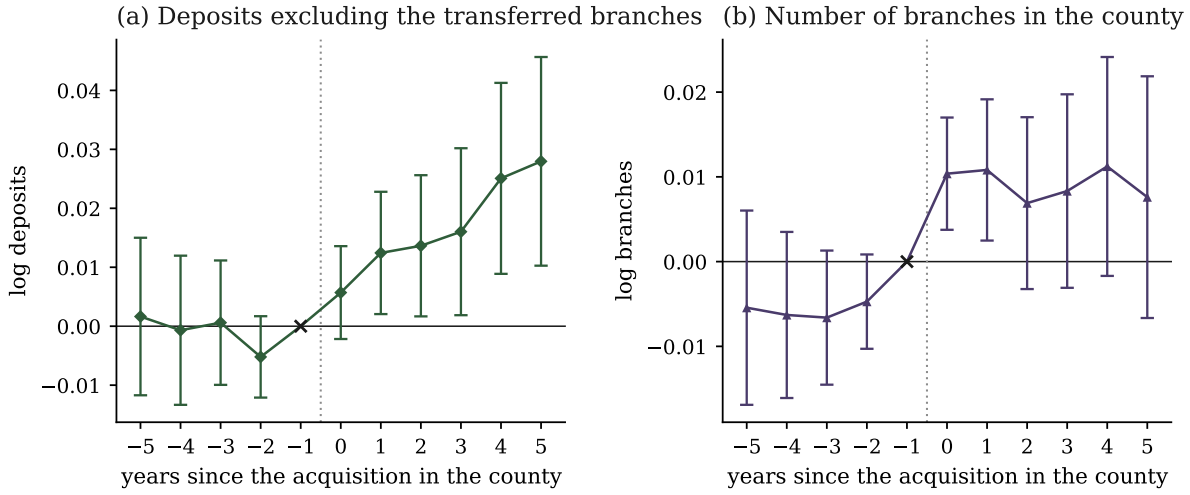


Figure 3: Deposits and branch counts excluding transferred branches. Event-study coefficients from equation (2) with $e = -1$ omitted. Panel (a) excludes the transferred branches from the dependent variable; under local exit of the detached deposits the coefficient would be zero. Panel (b) is the branch count, which falls if the buyer folds depositors onto a branch it already owns. 2,184 matched county pairs; 45,210 county-years; bars are 95% confidence intervals clustered on the county (1,979 clusters). The pre-period tests shown for these panels in the text are constrained by the county × cohort effect; the specification that leaves $e = -3, -2, -1$ free returns the same coefficients and passes at $F(3, 1970) = 1.00$.

The branch-level decline is therefore a reallocation within the local market, not an outflow from it. A model in which the acquired branch's depositors leave banking for money funds or

Table 6: Deposits and Branch Counts Excluding Transferred Branches

	Deposits excluding the transferred branches		Number of branches	
	(1)	(2)	(3)	(4)
Dependent Variable		log(deposits)		log(branches)
Acquisition county × Post	0.010	0.018**	0.006	0.014**
	(0.008)	(0.008)	(0.006)	(0.006)
County × Cohort FE	YES	YES	YES	YES
Year × Stack FE	YES	NO	YES	NO
State × Year × Stack FE	NO	YES	NO	YES
Adjusted R^2	0.981	0.983	0.975	0.977
Observations	47,060	45,210	47,060	45,210
Clusters (counties)	2,035	1,979	2,035	1,979

Note: 2,184 matched county pairs. Treated counties see a branch transfer at ty and none in the five years before; comparison counties see no transfer anywhere in the eleven-year window. Counties are matched within cohort on log deposits, log branches, log banks, the Herfindahl index and pre-period deposit growth, all measured at $ty-2$, by propensity score without replacement within a caliper of 0.20 standard deviations of the score logit. The worst standardized difference falls from 1.33 before matching to 0.22 after.
Treatment is assigned at the county level, so county × year effects would absorb it and time effects go no finer than state × year × stack. Standard errors are clustered on the county, the level of assignment.
The dependent variable in columns (1) and (2) excludes the transferred branches themselves. Under local exit of the detached deposits, branches that did not change hands would be unaffected and this coefficient would be zero.
* $p < .10$, ** $p < .05$, *** $p < .01$.

currency is inconsistent with panel (a). The state variable has to be a claim on a local deposit pool of roughly fixed size, which makes the loss a transfer of market share and of markup, and which is why γ and β must be matched jointly rather than one at a time.

Wang et al. (2022) include an outside option (cash, Treasury bills, and money market funds), so a deposit lost by one bank can leave the banking sector entirely. Panel (a) says that is not what happens here, which is informative about their market-size construction and not only about the one used here. For Dou and Ji (2021), a fixed local pool is the Phelps–Winter setting: customers are not created or destroyed, they are held or lost to a competitor, and that is what makes the markup a choice about the future as well as the present.

3.2.3 The Response of Rival Branches

Figure 4, Table 7, and Table 8 report the estimates. Rival branches gain +0.025 by $e = +5$, with a 95% confidence interval of $[0.013, 0.037]$, building gradually with no jump at the transaction date, on a flat pre-period ($F(4, 2343) = 0.88$). A placebo that splits the control counties at random returns nothing.

The pooled gain is not the discriminating test. If severed deposits were recaptured in proportion to the shock, the response must scale with s. Against the +1.0%, +3.7% and +9.5% that equation (4) requires across intensity terciles ($\bar{s} = 0.036, 0.138, 0.350$), the estimates are +2.8%, +1.5% and +4.4% (Table 8; Figure 4b). The top tercile's interval, $[+0.027, +0.062]$, excludes +0.095; that is where the logit and franchise predictions differ by a factor of two and where the

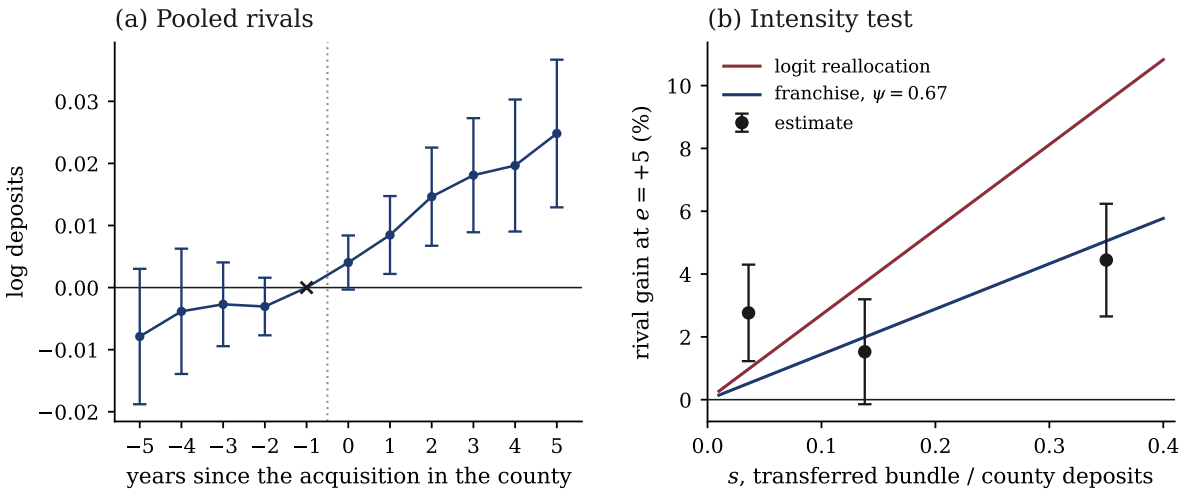


Figure 4: Deposits at rival branches in acquisition counties. Panel (a): pooled event-study coefficients from equation (3) with $e = -1$ omitted. A rival branch is one whose owner is neither party to the transaction and which does not itself change hands; comparison branches sit in matched counties that see no transfer at all across the window. 492,251 observations; bars are 95% confidence intervals clustered on the county (2,344 clusters); pre-period $F(4, 2343) = 0.88$, $p = 0.48$. Panel (b): the intensity test. Points are $e = +5$ estimates by tercile of the transferred bundle's county share s; whiskers are 95% intervals. The upper line is full reallocation of a 20% branch-level loss onto rivals (equation (4)); the lower line is the franchise prediction $\psi(1 - \chi)s$. At high s the franchise prediction lies inside the 95% interval and the logit prediction does not; at low s both undershoot.

Table 7: Deposits at Rival Branches in Acquisition Counties

Dependent Variable	(1)	(2)	(3)	(4)
	log(branch deposits)			
Acquisition county × Post	0.010	0.018***	0.018***	0.020**
	(0.006)	(0.005)	(0.005)	(0.008)
Branch × Cohort FE	YES	YES	YES	YES
Year × Stack FE	YES	NO	NO	NO
State × Year × Stack FE	NO	YES	YES	YES
Bank FE	NO	NO	YES	NO
Bank × Year × Stack FE	NO	NO	NO	YES
Adjusted R^2	0.938	0.940	0.941	0.947
Observations	492,391	492,301	492,251	404,666
Clusters (counties)	2,350	2,344	2,344	2,182

Note: Each observation is a rival branch: one whose owner is neither the buyer nor the seller, and which does not itself change hands anywhere in the eleven-year window. Comparison branches sit in matched counties that see no transfer at all across the window; the matching is that of Table 6.

Treatment is assigned at the county level, so county × year effects are unavailable and standard errors cluster on the county. Bank identity is nested inside the branch × cohort effect for any branch whose owner does not change, so the bank effect in column (3) is 84% redundant (4,209 of 5,015 categories) and moves nothing. Column (4) discards the between-bank comparison entirely: what identifies it is one bank's own branches in shocked counties against its own branches elsewhere in the same year.

* $p < .10$, ** $p < .05$, *** $p < .01$.

Table 8: Rival Response by Transfer Intensity

Dependent Variable	(1) Pooled	(2) Low s	(3) Mid s	(4) High s
	log(branch deposits)			
Panel A. Estimated rival gain at $e = +5$				
$e = +5$	0.025***	0.028***	0.015*	0.044***
	(0.006)	(0.008)	(0.009)	(0.009)
95% CI	[0.013, 0.037]	[0.012, 0.043]	[−0.003, 0.033]	[0.027, 0.062]
Mean transferred share $\bar{s}$	0.163	0.036	0.138	0.350
Panel B. Out-of-sample predictions				
Franchise with re-entry, $\psi(1-\chi)s$	+2.3%	+0.5%	+2.0%	+5.1%
Logit reallocation	+4.4%	+1.0%	+3.7%	+9.5%
Branch × Cohort FE	YES	YES	YES	YES
State × Year × Stack FE	YES	YES	YES	YES

Note: Same design as Table 7, split by the transferred bundle's pre-deal share of county deposits. Column (1) is the pooled estimate; columns (2)–(4) are intensity terciles. Panel B does not enter estimation. Franchise predictions are $\psi(1-\chi)\,s$ at the upper-bound calibration $\psi = 0.673$, $1-\chi = 0.216$. Logit predictions are $\beta = 0.20\,s/\zeta$ with $\zeta = 0.739$ (equation (4)): full reallocation of a 20% branch-level loss. At high s the franchise prediction lies inside the 95% interval and the logit prediction does not; at low s both undershoot. Figure 4(b) plots columns (2)–(4).

Standard errors clustered on the county in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$.

test has power. The bottom tercile's interval, $[+0.012, +0.043]$, exceeds the +1.0% logit requires and the +0.5% the franchise model predicts: both models undershoot by a similar margin, so the low-s cell separates neither system from the other. Where the least deposit moved, rivals gained as much as where the most did.

That pattern rejects a model in which replacing the owner releases customers into the local market to be recaptured by competitors in proportion to their shares, the prediction of equation (4) where the comparison has power. The data instead fit a stock that dies with the relationship: the depositor does not move to a rival in proportion to the shock. Combined with Section 3.2.2, which says the money stays in the county, the residual must be absorbed diffusely, by the buyer's own branches where it has them, by entrants, and by margins the branch panel cannot resolve. The bottom tercile remains unexplained by either demand system and is recorded as such.

In the logit demand system of Wang et al. (2022), which has no bank-specific state, a branch that raises its deposit rate or loses capacity releases its depositors to the remaining products in proportion to their shares. That is a prediction, not an assumption, and equation (4) is its quantitative form. The rejection is not about their estimates; it is about the class of demand system.

In Dou and Ji (2021), the customer base is lost to competitors: a firm that under-invests in markup today cedes customers tomorrow to firms that did invest. The depositors severed here do not reappear at competitors in proportion to the loss. The stock behaves like organizational capital that can be destroyed, not like a contested share of a fixed customer pool. Their mechanism governs how the stock is built and held; the present result concerns what happens when the firm behind it is replaced. The two need to be nested carefully.

3.2.4 Qualifications

One qualification is whether the comparison branches are themselves affected. Section 4.2 requires that treated and comparison branches share a posted rate and a local market and that only the treated one is displaced. If the buyer's own branches absorb part of the detached base, the estimate overstates $-\log\chi$ by their gain. Two designs disagree about whether they do. Against matched no-transfer counties the buyer's own branches gain +0.079 (0.029); against the same bank's branches in counties where it did not transact they gain +0.342, but on a pre-period that is strongly rejected ($F(3, 263) = 16.83$), since banks buy where their own business is already growing. The first controls for county characteristics and not for the buyer's own growth in that county; the second does the reverse. Table 4 takes the matched design seriously: it reports the headline within-buyer loss alongside buyer absorption, maps each into $1 - \chi$, and treats the unadjusted figure as an upper bound. Net of absorption, $1 - \chi \in [0.151, 0.216]$. On the seller side the within-bank comparison is clean and the answer is no: retained branches end +0.031 (0.047) on a pre-period that passes freely.

A second qualification is that the mechanism is established on a quantity, the installed base. The map from that quantity into a deposit-rate premium runs through the demand system of Section 5; a rough order-of-magnitude bridge appears at the end of this subsection.

Deposit rates in the United States are not set branch by branch. Banks post rates over tiers that cover many branches at once, typically defined by state or metropolitan area together with a competitive set, a pattern documented since Radecki (1998) and Heitfield (1999) and still visible in the branch-level data the modern literature uses. Two branches of the same bank in the same county therefore post the same rate, and the principal comparison here (a transferred branch against branches the same buyer already operates in that county) holds the deposit rate fixed by construction rather than by assumption. That is what Section 4.1 assumes about rate setting, and it is what allows equation (8) to read χ off a quantity without a deposit-rate channel to be signed.

What is lacking is therefore not branch resolution but resolution finer than the bank. The rate in the estimation panel comes from the Call Reports and is a bank-wide average: across the 81,279 bank-years present in more than one county, 99.96 percent exhibit no variation in it, because there is none to exhibit. Wang et al. (2022) construct their deposit rate the same way. Their baseline demand estimation takes the United States as a single market and each year as a separate one, so a bank-wide rate is the right object there; but the local-market specification of their Internet Appendix places that same bank-wide rate in a county-by-year panel, which is the specification this paper builds on. The measurement error a bank-wide rate introduces into a local demand system is therefore a property of the standard construction rather than of this implementation of it. RateWatch reports at the branch and, given how banks tier, delivers in practice a bank-by-market rate; that is the object neither paper has.

Three consequences follow. The yield sensitivity estimated in Section 5 rests on a bank-wide deposit rate standing in for a local one; county-level markups cannot be formed; and it is not possible to ask whether an acquirer changed deposit rates in the county it bought into relative to its other markets. None of the three touches χ, which equation (8) identifies from the jump in deposits alone.

A third qualification is selection into voluntary sales. The main design uses commercial branch sales, so the parties choose which offices move and when. Appendix C reports the same outcome under mandated ownership change: branch divestitures required by the Department of Justice as a condition of approving a bank merger, loss by acquirer prior presence, pipe A capacity under corrected SOD switch timing, and HHI counterfactuals. On a stacked sample of thirteen deals and several hundred matched branches, log deposits at divested offices fall by about 0.34 relative to ownership-stable same-state controls once the dominant Fleet/BankBoston 1999 deal is set aside, with a flat pre-period and a five-year loss near 0.41 (Table C1, Figure C1). The voluntary within-buyer loss is -0.24. The appendix is an external-validity check, not a re-estimate of χ: mandated buyers are typically out of market, and the absorption accounting

in Table 4 does not carry over. Voluntary pipe A heterogeneity by local density is reported separately in Appendix B (Table B6). The narrower point is that deposit runoff after an ownership change is not confined to voluntary sales.

Before entering the model it is useful to ask whether the quantity loss in Table 3 is in the same ballpark as the young-bank premium in Table 2. Under a constant yield semi-elasticity α of deposit demand, restoring a log stock loss of size $|\log \chi|$ requires a compensating differential of about $|\log \chi|/\alpha$ percentage points. With $1 - \chi \in [0.151, 0.216]$ that loss is 0.16–0.24 log points; taking $\alpha \approx 0.9$ from the local-market range in Dick (2008), Ho and Ishii (2011), and Egan et al. (2017) (and close to the screened estimate in Section 5) translates into roughly 18–27 basis points. That interval sits next to the organic-entry premium of 25 basis points in Table 2, Panel B, and below the raw 68 basis point all-in gap for banks in their first two years in Panel A, as it should, since the all-in figure also mixes product-tier and liquidity differences outside a single posted rate. The arithmetic is not an estimate of the franchise wedge and does not use the tenure profile; it only says that a non-transferable share of the order measured in Table 4 is already large enough, at standard deposit demand elasticities, to matter at the scale of the entry premium the next sections will quantify formally.

4 Model

The evidence in Section 3 records what happens to a deposit base when its owner is replaced. It does not imply what that means for the value of a bank's deposit franchise, for whether a branch changes hands, or for the competitive weight a transferred branch carries afterwards. I therefore set out a model of a local deposit market in which part of a branch's deposits is specific to the bank that assembled it.

The model is narrow in two respects. It is not an account of *why* a depositor leaves when ownership changes: awareness of the new owner, a switching cost that a salient event finally makes worth paying, relationship-specific human capital that departs with the branch manager, and service disruption during systems integration would all produce the same pattern, and the data cannot discriminate among them. And the transferability of a deposit base is an *input* here, taken from Section 3.2.1, not something the model identifies. What the model supplies is the mapping from that input to quantities that cannot be observed directly, together with one restriction that the data could have rejected and did not. Derivations are in Appendix A.

4.1 Depositors

Consider a local deposit market (a county m in year t) of size D_{mt}, held across the branches of banks $j = 1, \ldots, J$. Depositors allocate across branches by comparing what they offer. Adopting

the standard logit specification, branch b of bank j holds

$$D_{bt} \;=\; D_{mt}\,\sigma_{bt}, \qquad \sigma_{bt} \;=\; \frac{\exp\big(\alpha\, y_{jt} + b_1 \log n_{jmt} + \xi_{jmt}\big)}{\sum_{b'} \exp\big(\alpha\, y_{j(b')t} + b_1 \log n_{j(b')mt} + \xi_{j(b')mt}\big)}, \tag{5}$$

where y_{jt} is the deposit yield the owner posts, n_{jmt} its local branch count and ξ_{jmt} unobserved quality. Equation (5) is the deposit demand system of Wang et al. (2022): the same characteristic list, the same estimator, the same yield sensitivity α. Under the standard assumption that the semi-elasticity of a bank's deposits in its posted yield is constant,

$$\lambda \;\equiv\; 1/\alpha \tag{6}$$

is its inverse, in percentage points. This is the model's only index of static market power, and α is the object Wang et al. (2022) estimate and Section 5 re-estimates. Jiang et al. (2026) estimate the same demand block with endogenous branch networks and bank entry.

One institutional feature matters throughout. Deposit rates in the United States are posted by the owner over many branches at once, so two branches of the same bank in the same local market face the same y and the same competitor rate. That pattern has been documented since Radecki (1998) and Heitfield (1999), and it is quantified for this panel in Section 3.2.4: across the 81,279 bank-years present in more than one county, 99.96 percent show no within-bank variation in the deposit rate. It is what makes the comparison in Section 3.2.1 hold the deposit rate fixed by construction rather than by assumption.

4.2 A Change of Owner

Consider what (5) implies for a transfer. At date τ branch b passes from bank j to bank j'. The premises, the location, the local market and the deposit insurance pass intact; once the branch is on the acquirer's rate sheet so does the posted yield; and the branch count of the acquirer rises by exactly what the seller's falls. Every argument of σ_{bt} is therefore either unchanged or inherited, so *the demand system predicts that a transferred branch's deposits do not move.* That prediction is the natural benchmark, and Section 3.2.1 rejects it.

The departure I make is that part of a branch's deposits is specific to the bank that assembled them, and does not survive its replacement. A fraction $\chi \in (0, 1]$ carries over and the rest detaches on impact,

$$D_{b,\tau^+} \;=\; \chi\, D_{b,\tau^-}, \qquad R_b \;\equiv\; (1-\chi)\, D_{b,\tau^-}, \tag{7}$$

so that

$$\Delta \log D_b \;=\; \log \chi. \tag{8}$$

Equation (8) is not a result. χ is defined as the surviving fraction of a branch's deposits, which is what Section 3.2.1 measures, and (8) simply records that the demand parameters do not enter

it, because the acquirer inherits every argument of (5). The content of the model is elsewhere: in where R_b goes, and in what (7) implies for value. Defining χ on deposits rather than on a latent attachment stock also means I never have to take a stand on what fraction of a branch's deposits is relationship-based; the data speak to the product of that fraction and the share of it that is lost, and that product is what every expression below uses.

Both the object and the functional form in (7) are standard in the customer-capital literature. The object is *inalienable customer capital* in the sense of Dou et al. (2021a): a component of a customer relationship depends on the specific human capital of the people who built it and, because that dependence is not legally enforceable, is not fully owned by the firm, the notion Hart and Moore (1994) introduced for human capital generally. The functional form is theirs as well. In their model the departure of key talents leaves the firm with $(1 - m\tau_t)B_t$ of its customer capital B_t, a multiplicative haircut on the pre-event stock, and revenue and firm value are proportional to that stock, so a proportional loss of customers is a proportional loss of quantity and of value. The same linearity is explicit in Dou and Ji (2021), where the customer base enters firm-level demand as a multiplicative coefficient, following Phelps and Winter (1970) and Ravn et al. (2006). That linearity lets me write the transfer as a factor on observed deposits in (7) rather than on a latent stock, and makes the valuation in Section 4.4 scale with χ.

Three departures should be recorded. First, in Dou et al. (2021a) the event is turnover of key personnel within a firm whose ownership never changes; here it is a transfer of the operating unit itself, which is what allows the surviving fraction to be read off deposits rather than off a survey index of brand perceptions. Second, their haircut $m\tau_t$ is firm-specific and time-varying by construction (generating that heterogeneity is the point of their paper), whereas I impose a constant χ in the baseline and report in Section 4.4 the two facts that say it is not constant. Third, and most important, in their model the customer capital that leaves is *reallocated*: departing talents carry it into a new firm, and the value of what they carry is what pins down their compensation. Equation (9) allows for that channel through ω_R but does not impose it, and Section 3.2.3 finds that rivals do not recover the severed base in proportion to its size. On that margin the evidence departs from theirs rather than inheriting from it. For orders of magnitude: none of this literature measures the surviving fraction, and the values in use are assumptions. $m = 0.35$ applied at their calibrated $\bar{\tau}$ implies an average loss near 14 percent of the total base in Dou et al. (2021a); Lustig et al. (2011) assume half of organization capital transfers when a manager moves; and Eisfeldt and Papanikolaou (2013) assume none of it does.

Where the released mass R_b goes cannot be left to (5). In a discrete-choice system a depositor who leaves one product must reappear at another in proportion to the shares of the alternatives, and that is the restriction Section 3.2.3 rejects. I therefore make the destination a primitive.

The released mass is allocated in fixed proportions,

$$R_b \;\longrightarrow\; \underbrace{\omega_B R_b}_{\text{acquirer's other local branches}} \;+\; \underbrace{\omega_R R_b}_{\text{rivals, pro rata}} \;+\; \underbrace{\omega_0 R_b}_{\text{out of the measured base}}, \qquad \omega_B + \omega_R + \omega_0 = 1, \tag{9}$$

independent of the size of R_b. The economic content is that a severed depositor is not returned to the market as an anonymous flow that deposit rates compete for. She is re-matched subject to a friction that favours whoever now holds her account, which is why ω_B is not zero, and she reaches rivals only in part, which is why ω_R is below one. The fixed-proportions restriction is what makes (9) testable: it says the composition of the outflow does not vary with how much deposit moved.

The comparison group used in Section 3.2.1 is the acquirer's own branches in the same market. Because they share the posted yield, the competitor rate and the local market with the transferred branch, they are a counterfactual for it in the absence of (7). But by (9) they are also a recipient of the released mass, so the within-buyer difference-in-differences coefficient is

$$\beta^{\text{within}} \;=\; \log\chi \;-\; \omega_B(1-\chi)\,\frac{D_{b,\tau^-}}{D_{\text{own}}}, \tag{10}$$

where D_{own} is the deposits at those branches. Equation (10) is weakly more negative than $\log\chi$, so the within-buyer estimate is an upper bound on the share of a base that fails to survive, and chaining it with an estimate of the acquirer's own gain against a benchmark that receives none of the released mass recovers $\log\chi$. That is why Section 3.2.4 reports the non-transferable share as an interval rather than a point, and why the two designs have to be read together.

Write $s \equiv D_{b,\tau^-}/D_{mt}$ for the transferred branch's share of the local market and ζ for the share held by the rivals in the estimation sample. Under (9) a rival that does not re-optimise its posted rate gains

$$\Delta \log D_k \;=\; \frac{\omega_R(1-\chi)}{\zeta}\; s \;+\; o(s), \tag{11}$$

which is linear in s, has slope $\omega_R(1-\chi)/\zeta$, and does not depend on the rival's own share; setting $\omega_R = 1$ gives the full-reallocation benchmark of equation (4). Under (5) alone, by contrast, a branch that sheds the same mass releases its depositors to the remaining products in proportion to their shares, and the corresponding object is

$$\Delta \log D_k \;=\; \frac{(1-\chi)\,s}{1-s}, \tag{12}$$

which is convex in s and likewise independent of the rival's share.

Equations (11) and (12) coincide as $s \to 0$ and diverge by the factor $[\omega_R(1-s)/\zeta]^{-1}$, which is increasing in s. The intensity split of Section 3.2.3 is therefore a discriminating test rather than a robustness exercise, and its power is concentrated in the upper tail of the intensity distribution,

where the rival estimates reject (12). The economic difference between the two is that in (12) a lost depositor is mechanically a gained depositor somewhere else, whereas in (11) a severed depositor has to be re-acquired and a fraction ω_0 never is. Nothing in (11) is fitted to the rival data.

4.3 Banks

The owner posts one yield over many branches. Raising it costs the spread on every deposit the bank holds and buys two things: the deposits it wins this period, and (because a depositor won today is a depositor tomorrow) the part of those that will still be there later. Writing $\varsigma = r^f - y$ for the deposit spread and Ω for the shadow value of the attachment a unit of inflow generates, expressed in the same units, the first-order condition gives

$$\varsigma^\star \;=\; \lambda \;-\; \Omega. \tag{13}$$

The static term is the inverse semi-elasticity: with $\Omega = 0$, (13) is the deposit markup of Wang et al. (2022), the market rate minus $1/\alpha$. The dynamic term is what the franchise motive subtracts from that markup, so the bank posts a higher rate and accepts a narrower spread than static rate setting implies. Equation (13) is the deposit analogue of the markup wedge in Dou and Ji (2021): there the instrument is a product price and the wedge scales a Lerner index; here it narrows a spread.

Because the yield is posted over the whole network, Ω is a property of the owner's total deposits D_j rather than of any one branch. That has an immediate consequence for how the mechanism can be tested. Let the acquired block be a share $a \equiv D_{b,\tau^-}/D_j$ of the acquirer's deposits. The posted spread then moves only through the induced movement in Ω, so

$$\left|\Delta\varsigma\right| \;\le\; \left|\frac{\partial\Omega}{\partial \log D_j}\right| \left[\chi + \omega_B(1-\chi)\right] a \;+\; o(a). \tag{14}$$

The deposit-rate response is first order in a, while the quantity response in (8) is of order one in the branch's own deposits and does not vanish with a. For acquisitions that are small relative to the acquirer (the typical case in the data), the mechanism therefore produces a large quantity response and almost no deposit-rate response. A bank-level rate test is under-powered by construction, and a null in such a design bounds a rather than rejecting the mechanism. The same experiment run at bank-level annual frequency returns +0.6 basis points on the all-in deposit rate ($t = 0.39$), which is what (14) predicts. The absence of a deposit-rate response is evidence for the mechanism, not a limitation of the design.

4.4 The Value of a Branch, and to Whom

The quantities above imply consequences for value once combined with a valuation of deposits. I adopt the valuation of Drechsler et al. (2026) so that the object is theirs: deposits D operated by j are worth $\phi_j D$, where

$$\phi_j \;=\; \frac{\left(1-\beta_j^d\right)r^f - c_j}{r^f+\delta} \tag{15}$$

is the present value per deposit dollar of the spread the owner earns net of servicing cost, β_j^d is the deposit beta, c_j the operating cost per dollar and δ the rate at which the base decays. Define the arriving fraction

$$\kappa \;\equiv\; \chi \;+\; \omega_B(1-\chi), \tag{16}$$

the share of the seller's deposits that ends up somewhere in the acquirer's own network.

The valuation wedge is owner-specific. Branch b is worth $\phi_s D_b$ to its incumbent and $\phi_b \kappa D_b$ to an acquirer, since the acquirer operates what stays at the branch and what lands on its other local branches, but not what accrues to rivals or leaves the market. At a common ϕ the difference is

$$W \;=\; \phi\,(1-\kappa)\,D_b \;=\; \phi\,(1-\chi)(1-\omega_B)\,D_b \;>\; 0 \qquad \text{whenever } \chi<1 \text{ and } \omega_B<1, \tag{17}$$

and it is the same for every acquirer. Two consequences follow. Equation (17) says the franchise cannot be pledged at going-concern value, since a lender can realise at most what a buyer will pay: its collateral value is at most κ times ϕD_b. And the wedge is buyer-invariant, which distinguishes it from the friction in the closest antecedent. Granja et al. (2017) show that failed banks are misallocated because the natural high-value acquirer is capital-constrained and is outbid by a better-capitalised bank that values the franchise less, a Shleifer and Vishny (1992) fire sale in which the asset is intact but goes to the wrong owner, so the loss is an allocation inefficiency. In (17) the asset is degraded in the act of transfer, for every owner, whatever its capital. The two frictions coexist and they call for different remedies. The limiting cases are also the right ones: at $\chi = 1$ nothing detaches and a deposit base is an ordinary transferable asset, while at $\omega_B = 1$ everything that detaches lands elsewhere in the acquirer's network, so the acquirer loses nothing and the wedge vanishes even though the branch's own deposits fell. The wedge is not the branch-level decline; it is the part of the decline the acquirer does not recover, which is why the quantification in Section 5 needs ω_B and not only χ.

A transfer occurs only if the acquirer's valuation weakly exceeds what the seller forgoes, $\phi_b \kappa D_b \geq \phi_s D_b$, that is if

$$\frac{\phi_b}{\phi_s} \;\geq\; \frac{1}{\kappa}. \tag{18}$$

At $\kappa = 0.8$ an acquirer needs a franchise margin a quarter higher than the seller's merely to break even on the transfer, so the market for deposit franchises has a no-trade region that widens as χ

falls. Equation (18) is also the constructive answer to the objection that sellers in Section 3.2.1 are selected. They are, and Hannan and Pilloff (2009) document on what: targets in U.S. banking have lower profitability, higher cost inefficiency, thinner capital and shorter histories. But that selection runs on the level of bank performance, and their specification contains no growth variable, so it is silent on whether targets were declining. What their evidence does show cuts against the objection: acquirers pay *up* for local core-deposit intensity ($+0.014$, $t = 4.87$), the opposite sign from a story in which buyers systematically acquire decaying franchises. They also name the mechanism measured here and leave it open, describing "the tendency of local depositors to withdraw deposits as a result of the change in ownership" as "essentially an empirical question" (p. 1172).

A branch holding D_b before transfer carries χD_b under its new owner, so a measure of local concentration computed on pre-transfer deposits understates post-transfer concentration, by an amount increasing in $1 - \chi$ and in s. The case that matters is a divestiture ordered to offset a merger. There the acquirer of the divested branch is by design a firm without local overlap, so it has no other branches on which the released mass could land, and the merging firm (which does have them) is barred from receiving it: the Department of Justice requires divested branches to come from the non-surviving party, forbids soliciting divested-branch customers, and forbids transferring their accounts out of the divested branch (Pilloff, 2005). Under a remedy of that design $\omega_B \to 0$, so $\kappa = \chi$ and the wedge in (17) attains its maximum $\phi(1 - \chi)D_b$. If in addition an out-of-market acquirer retains less of the base than an in-market one, the measured decline at a divested branch exceeds that at a voluntarily sold one. Appendix C confirms the ordering: against ownership-stable same-state controls, branches divested under antitrust order lose 0.336 log points in the post period and about 0.41 at a five-year horizon, against a within-buyer 0.24 and a neutral-benchmark 0.16 for voluntary sales. The remedy's own rules, written to stop the merging firm from recapturing the customers it was ordered to give up, remove the channel through which those customers would otherwise have stayed inside a bank's network, and so enlarge the destruction the remedy does not account for.

The motivating fact of Section 2.3.1 follows without further structure. An entrant that buys an established base of size A arrives with κA rather than A, so purchase is a genuine substitute for building a base and the better substitute the larger is κ, but an incomplete substitute for any $\kappa < 1$. At $\kappa = 1$ the buyer would inherit the incumbent's position and could post the incumbent's rate; for $\kappa < 1$ the residual is not that a franchise cannot be bought but that it cannot be bought whole. Section 2.3.2 is the empirical counterpart: within the same bank in the same year, a county entered by purchase begins at 59 percent of the share the bank will eventually hold there, against 8.8 percent for a county entered by opening branches.

Three features of the model should be stated plainly. First, χ is treated as a constant and it is not one: splitting on pre-deal deposits, the five-year coefficient runs from $+0.155$ in the smallest tercile to -0.505 in the largest (Table B3), and weighting the within-buyer regression

by the branch's own pre-period deposits (which, unlike a tercile split on the level of the outcome, does not sort on the dependent variable) moves the coefficient from -0.243 (0.033) to -0.363 (0.121). Larger blocks lose a larger fraction, and the divestiture result requires the same of buyer types. The natural extension makes χ decline in the transferred block relative to the acquirer, for instance because retaining a base is an investment competing for scarce internal funds as in Dou and Ji (2021); I do not pursue it, and I report every quantity that depends on χ at both weightings. Second, the destination weights in (9) are matched to moments rather than derived; what the model asserts about them, and what Section 3.2.3 tests, is that they do not vary with s. Third, I cannot follow ω_0. A depositor who leaves the measured local base may have moved to an institution the Summary of Deposits does not cover, to a market I do not observe, or out of deposits altogether. Claims below are therefore about deposits that cease to be measured at the branch and in the county, not about deposits that cease to exist.

5 Quantitative Analysis

This section estimates the demand system of equation (5), which fixes the model's index of static market power and shows what the sample screens conventional in this literature cost; calibrates the transfer block (the surviving fraction χ and the destination weights of (9)) from the moments of Section 3, holding one of them out as a test; and puts the result to two uses: what a merger remedy actually delivers, and what a failed bank's deposit franchise is worth to the agency that has to sell it. Neither counterfactual depends on the demand estimate, for a reason given at the end of Section 5.1.

5.1 Deposit Demand

Table 9 reports estimates of (5) in the form

$$\log \sigma_{jmt} \;=\; \alpha\, y_{jmt} \;+\; b_1 \log n_{jmt} \;+\; \eta_j \;+\; \tau_{mt} \;+\; \xi_{jmt}, \tag{19}$$

on the bank × county × year panel, with the deposit yield instrumented by own cost shifters as in Ho and Ishii (2011). Column (1) applies the sample screens of Wang et al. (2022); column (2) restores the banks those screens discard; column (3) reprints their local-market estimates for comparison.

Column (1) recovers a yield sensitivity of $\alpha = 0.880$ (0.055) against 0.903 (0.199) in column (3). The point estimates agree. The standard errors are not comparable and no precision gain is claimed: they cluster on year, I cluster on the bank-county pair, and roughly two dozen clusters against forty-eight thousand accounts for much of the difference on its own. By (6) the implied inverse semi-elasticity is $\lambda = 1/\alpha = 1.14$ percentage points. Economically, a one percentage point higher deposit yield raises a bank's county deposit share by about 0.88 log points, inside the 0.6–1.1 range reported by Dick (2008), Ho and Ishii (2011) and Egan et al.

Table 9: Deposit Demand: Screens and Replication

	(1) Established banks	(2) All banks	(3) Wang et al. (2022)
Dependent Variable		log(deposit share)	
Deposit yield, α	0.880^{***}	1.375^{***}	0.903^{***}
	(0.055)	(0.062)	(0.199)
log local branches	0.830^{***}	1.253^{***}	0.509^{***}
	(0.009)	(0.006)	(0.048)
IV for deposit yield	YES	YES	YES
Bank FE	YES	YES	YES
County × Year FE	YES	YES	YES
Year × Sector FE	NO	NO	YES
Tenure bins	YES	YES	NO
Kleibergen–Paap rk Wald F	201.9	443.7	
Cragg–Donald Wald F	760.5	2,268.3	
R^2	0.053	0.468	0.399
Observations	257,328	590,157	377,309
Cluster level	Bank × county	Bank × county	Year
Sample period	1994–2019	1994–2019	1994–2017

Note: Columns (1)–(2) estimate $\log \sigma_{jmt} = \alpha\, y_{jmt} + b_1 \log n_{jmt} + \theta_{k(jmt)} + \eta_j + \tau_{mt} + \xi_{jmt}$ on the bank × county × year panel. Deposit yield is instrumented by salaries and premises expense scaled by lagged assets and their squares (Ho and Ishii, 2011). Column (1) applies the local screens of Wang et al. (2022): banks below a 4% county share or present fewer than five years are dropped, so column (1) is estimated on established banks only. Column (2) restores those banks. Column (3) reprints their Internet Appendix Table IA.I (county-level deposit shares). An entrant is by construction both small-share and short-tenure; the difference between the column (1) and column (2) yield elasticities (0.880 versus 1.375) is the cost of those screens for this paper's object. This table identifies the deposit-rate elasticity; the county-tenure share profile θ_k is in Table 5.

Their published specification also includes log employees per branch and year × sector effects. Both are omitted in columns (1)–(2): employees per branch is a bank-wide ratio with no local variation in a county panel, and the sample is commercial banks throughout. The R^2 row is the centered R^2 after partialling out absorbed fixed effects in columns (1)–(2) and Adj. R^2 as published in column (3). First-stage F statistics are not reported in their Table IA.I; for columns (1)–(2) the Kleibergen–Paap rk Wald F is cluster-robust and the Cragg–Donald Wald F is the i.i.d. reference statistic. Standard errors in columns (1)–(2) are clustered on bank × county; column (3) clusters on year as in the source. * $p < .10$, ** $p < .05$, *** $p < .01$.

(2017). First-stage Kleibergen–Paap F statistics are 202 and 444 in columns (1) and (2), so weak instruments are not the issue.

Restoring the discarded banks raises the coefficient to $\alpha = 1.375$ (0.062), fifty-six percent larger, and lowers λ to 0.727 percentage points. A bank is discarded for holding under four percent of a county's deposits or for having been present fewer than five years. An entrant is by construction both, so column (1) is estimated on a sample from which the subject of this paper has been removed, and the gap between the columns is what that costs. Three smaller departures from their local-market specification should be recorded. I do not include their measure of employees per branch: in a county panel it is a bank-wide ratio replicated across the bank's markets, so it carries no local information and competes with the local branch count for the same variation. I absorb bank and county-by-year effects but not the sector-by-year effects their Table IA.I also carries, since the sample is commercial banks throughout. And the yield is a bank-wide average from the Call Reports, for the reason set out in Section 3.2.4.

Neither counterfactual below uses α. The remedy calculation in Section 5.3 works through the scale of the divested competitor and takes its rate consequence from a published reduced-form estimate obtained in the same institutional setting; the resolution calculation in Section 5.4 works through the franchise valuation of Drechsler et al. (2026). That choice is deliberate. The estimate in (19) rests on a bank-wide deposit rate standing in for a local one, and Section 3.2.4 is explicit about what that costs; I would rather the quantitative conclusions not inherit the weakness. What (19) does is establish that the data reproduce the benchmark, quantify what its screens remove, and supply the value of λ that equation (13) needs.

5.2 The Transfer Block

Four numbers are needed: the surviving fraction χ and the three destination weights of (9). Four moments of Section 3 supply them, and a fifth is held out.

By (10) the within-buyer coefficient is an upper bound on the non-transferable share, and chaining it with the gain at the acquirer's own branches against a neutral benchmark recovers $\log \chi$. Table 4 does this and reports

$$1 - \chi \;\in\; [0.151,\; 0.216] \tag{20}$$

with branches weighted equally. Weighting instead by the branch's own pre-period deposits (which, unlike a split on terciles of the outcome level, does not sort on the dependent variable) moves the within-buyer coefficient from -0.243 (0.033) to -0.363 (0.121) and the chained coefficient from -0.164 (0.044) to -0.307 (0.129), so that

$$1 - \chi \;\in\; [0.265,\; 0.304] \tag{21}$$

on a dollar footing. I carry both throughout. Equation (20) is the precisely estimated object; (21)

is the one that belongs in a valuation, because a franchise is worth dollars and not branches, and it is larger because bigger blocks lose a larger fraction. Its confidence interval is correspondingly wide, and every number below is reported at both.

Two moments pin the destination weights. Rival branches in an acquisition county end +0.025 above their matched counterparts, which by (11) evaluated at the mean transferred share in that sample implies

$$\omega_R \;\approx\; 0.49. \tag{22}$$

The part of the county excluding the transferred branches gains +0.028, and since that aggregate contains both the acquirer's other branches and the rivals, it pins their sum: at the median transferred share of 0.17, $(\omega_B + \omega_R)(1-\chi)s/(1-s) = 0.028$ gives $\omega_B + \omega_R \approx 0.63$ and hence

$$\omega_B \;\approx\; 0.14, \qquad \omega_0 \;\approx\; 0.37. \tag{23}$$

So roughly half of what detaches is recaptured by rivals, a seventh lands elsewhere in the acquirer's own network, and rather more than a third ceases to be measured in the county.

Two qualifications. First, the direct estimate of the acquirer's own gain, +0.079 (0.029), is larger than (23) implies once it is converted to dollars, because the acquirer's other local branches are on average two to three times the size of the acquired block. I use the county aggregate rather than the direct estimate to pin ω_B, on the grounds that it is estimated on 2,184 matched county pairs and 45,210 county-years while the direct estimate rests on 435 branch-cohorts in matched counties that are systematically smaller, and I treat the direct estimate as qualitative confirmation that $\omega_B > 0$ rather than as its magnitude. Second, ω_0 is a residual and I cannot follow it: a depositor who leaves the measured local base may have moved to an institution the Summary of Deposits does not cover, to a market I do not observe, or out of deposits altogether. Nothing below turns on which.

The intensity profile of the rival response enters nowhere above and is held out for validation. Under (11) at $\omega_R = 0.49$ the predicted gain at the top intensity tercile ($\bar{s} = 0.350$) is 5.0 percent; under (12) the same branch-level decline requires 11.6 percent. The data give 4.4 percent, with a 95 percent interval of [2.6, 6.2]. The demand-system prediction lies outside that interval and the franchise prediction lies inside it, and that tercile is where the two differ by a factor of two and where the comparison has power. At the bottom tercile the two predict 0.8 and 0.5 percent against an observed 2.8 percent: both fall short by a similar margin, so that cell separates neither system from the other, and I have no account of it.

For the two exercises below I need ϕ from (15). I adopt the values of Drechsler et al. (2026) throughout so that the object is theirs: a deposit beta of 0.4, an operating cost of 1.2 percent per dollar, a decay rate of 10 percent and a market rate of 4 percent, which give

$$\phi \;=\; \frac{(1-0.4)\times 4\% - 1.2\%}{4\% + 10\%} \;=\; 8.6 \text{ cents per deposit dollar.} \tag{24}$$

This reproduces their aggregate: applied to the $17.5 trillion of U.S. deposits it gives a deposit franchise of about $1.5 trillion, which is what they report at a four percent market rate. Table 10 collects every primitive the two counterfactuals use, with the moment or the source each comes from, and reports the held-out moment against its prediction.

Table 10: Calibration of the Transfer Block

Object	Source	Value
Panel A. Demand		
Yield sensitivity α, established banks	Table 9, col. (1)	0.880
Yield sensitivity α, all banks	Table 9, col. (2)	1.375
Inverse semi-elasticity $\lambda \equiv 1/\alpha$	(6), percentage points	1.14 / 0.727
Panel B. Transfer		
Non-transferable share $1-\chi$, equal-weighted	(20), Table 4	[0.151, 0.216]
deposit-weighted	(21)	[0.265, 0.304]
Recaptured by rivals ω_R	(22), pooled rival gain	0.49
Recaptured in the acquirer's network ω_B	(23), county aggregate	0.14
Out of the measured base ω_0	residual	0.37
Panel C. Franchise valuation		
Deposit beta β^d	Drechsler et al. (2026)	0.40
Operating cost c	Drechsler et al. (2026)	1.2%
Decay rate δ	Drechsler et al. (2026)	0.10/yr
Market rate r^f	Drechsler et al. (2026)	4%
Franchise value ϕ	(24)	8.6 cents per $
Held out of the calibration		
Rival response across intensity terciles	Table 8	see §5.2

Note: Panel A reports the demand estimates; neither counterfactual in Section 5 uses them (Section 5.1). Panel B calibrates the transfer block of equations (7) and (9). The interval for $1-\chi$ runs from the chained estimate, which nets the gain at the acquirer's own branches, to the unadjusted within-buyer estimate; the deposit-weighted row weights each branch by its own pre-period deposits and is the figure used for valuation. ω_R inverts the pooled rival gain at the mean transferred share; ω_B is obtained from the county aggregate, which pins $\omega_B + \omega_R$, rather than from the direct estimate of the acquirer's own gain (Section 5.2). Panel C adopts the parameters of Drechsler et al. (2026) unchanged, so that ϕ reproduces their aggregate deposit franchise of about $1.5 trillion. The intensity profile of the rival response is the over-identifying test and does not enter the calibration above.

5.3 What a Merger Remedy Delivers

When a proposed bank merger would raise local concentration past a threshold (in practice, an increase of 200 points in the Herfindahl index to a level of 1800), the reviewing agencies require the parties to divest branches, and the remedy is written and evaluated on the presumption that the divested deposits arrive intact at their new owner. Section 4.4 says they do not, and that in this setting they arrive less intact than anywhere else: the remedy's own rules require the divested branches to come from the non-surviving party, forbid soliciting their customers and forbid transferring their accounts, so the merging firm cannot recapture them and the acquirer, chosen for having no local overlap, has no branches on which they could land. Hence $\omega_B = 0$

and the arriving fraction is $\kappa = \chi$. I set $\omega_R = 0.49$ as calibrated and $\omega_0 = 0.51$.

I apply this to the thirteen divestitures ordered by the Department of Justice and matched to the Summary of Deposits in Appendix C: 527 branches holding $23.0 billion of deposits across 111 counties, giving 114 deal-county cells. For each cell I compare the divested block's share of county deposits as the remedy scores it, D_{div}/D_c, with the share its new owner actually operates,

$$s^{\text{realised}} = \frac{\chi\, D_{\text{div}}}{D_c - \omega_0(1-\chi)D_{\text{div}}}. \tag{25}$$

Table 11 reports the result by deal and in aggregate, and Figure 5 shows the whole distribution.

Table 11: Antitrust Divestiture Capacity

Divestiture	Year	Counties	Branches	Divested share of county: Scored (%)	Divested share of county: Realised (%)	Shortfall (%)	ΔHHI (points)
Panel A. By deal, at $\chi = 0.66$ (the divestiture estimate)							
Fleet / BankBoston	1999	19	263	8.5	5.8	32.6	+31
PNC / National City	2008	8	60	10.3	7.0	32.4	+52
Regions / AmSouth	2006	18	45	13.3	9.1	32.0	+41
Zions / First Security	1999	20	48	19.9	13.9	31.2	+115
First Union / Wachovia	2001	15	31	8.4	5.7	32.6	+41
Wells / First Security	2000	11	30	7.8	5.3	32.7	+54
Firstar / U.S. Bancorp	2001	3	11	3.1	2.0	33.2	+36
Wachovia / SouthTrust	2004	6	14	3.2	2.2	33.2	+25
Wells / Marquette	2001	3	6	19.2	13.3	31.3	+5
SunTrust / Huntington	2001	3	7	5.4	3.6	33.0	+51
BB&T / First Virginia	2003	5	7	17.6	12.3	31.5	+49
Fifth Third / Old Kent	2001	2	3	2.0	1.3	33.3	+17
Wells / Brenton	2000	1	2	1.4	1.0	33.4	+14
All thirteen	1999–2008	111	527	9.2	6.2	32.5	+36
Panel B. Aggregate, by the reading of χ							
	$1-\chi$			Scored	Realised	Shortfall	Gross-up
Voluntary sales, equal-weighted	0.216			9.2	7.3	20.8	×1.28
Voluntary sales, deposit-weighted	0.304			9.2	6.5	29.4	×1.44
Mandated divestitures	0.336			9.2	6.2	32.5	×1.51

Note: The thirteen divestitures ordered by the Department of Justice and matched to the Summary of Deposits in Appendix C. Divested deposits are measured at the June preceding the merger. *Scored* is the divested block's share of county deposits, which is what the remedy is written and evaluated on; *realised* is $\chi D_{\text{div}}/(D_c - \omega_0(1-\chi)D_{\text{div}})$, the share the new owner actually operates once a fraction $1-\chi$ of the base fails to survive the change of owner and $\omega_0(1-\chi)$ of it leaves the county. Under a remedy $\omega_B = 0$, because the merging firm is barred from soliciting divested-branch customers and the acquirer has no local branches on which the released mass could land; I set $\omega_R = 0.49$ as calibrated in Section 5.2 and $\omega_0 = 0.51$.

Both share columns and the loss are averaged across the deal's counties, weighted by divested deposits; the same weighting gives the aggregate row and Panel B. ΔHHI is the county Herfindahl index under the realised allocation minus the index under the scored allocation, in points, carving the divested block out of the county's largest owner able to accommodate it; the merger itself is common to the two allocations and is not modelled. Figure 5b plots the county-level gaps against a 200-point screening trigger.

Gross-up in Panel B is $1/\chi$, the factor by which a divestiture must be enlarged to deliver a competitor of the scale the remedy was written for. The three rows use the two bounds on $1-\chi$ from voluntary sales (equations (20) and (21)) and the five-year estimate obtained on the divestitures themselves (Table C1).

Panel (a) of Figure 5 plots (25) against the scored share for every cell. Nothing lies on the

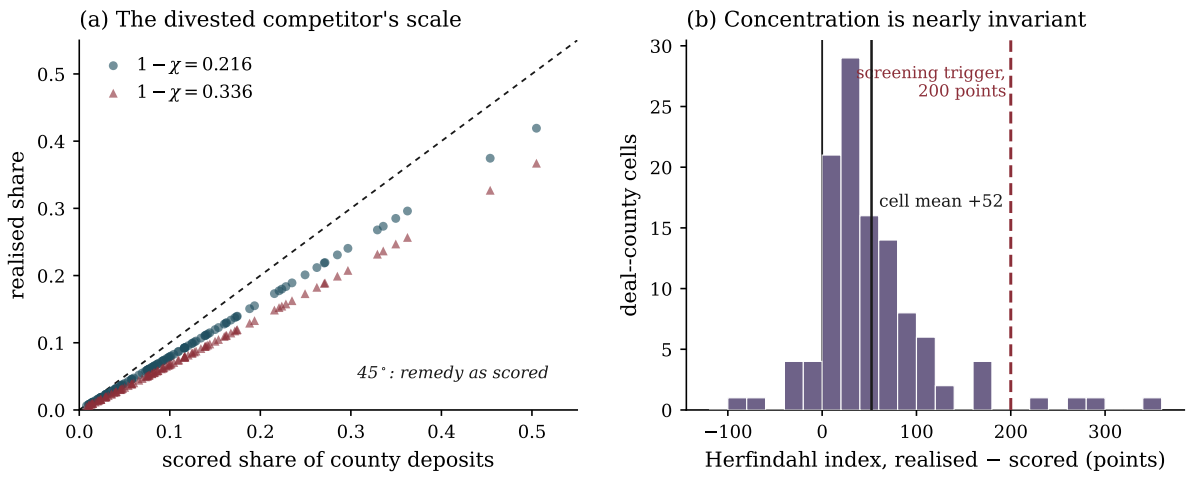


Figure 5: Antitrust divestiture capacity. The thirteen divestitures ordered by the Department of Justice and matched to the Summary of Deposits in Appendix C: 527 branches, $23.0 billion of deposits, 114 deal–county cells. **Panel (a).** The divested block's realised share of county deposits, equation (25), against the share the remedy is scored on. The dashed line is the forty-five degree line, on which the remedy would sit if the divested deposits arrived intact. Circles use the equal-weighted bound on $1-\chi$ from voluntary sales; triangles use the five-year estimate obtained on the divestitures themselves. **Panel (b).** The county Herfindahl index under the realised allocation minus the index under the scored allocation, in points, at $\chi = 0.66$. The dashed vertical line is the 200-point increase that triggers a divestiture requirement. The gap is centred near zero: nine percent of cells are negative, and ninety-six percent lie below the trigger.

forty-five degree line: the remedy creates a smaller competitor than it was written for. Across the thirteen deals the divested block is scored at 9.2 percent of county deposits and realises 6.2 percent, a loss of 32.5 percent of the intended scale, and by Section 3.2.1 the loss is permanent: the gap is flat from the first post-transfer year through the fifth and closes by only about a fifth over fifteen years. In dollars the thirteen remedies were written to transfer $23.0 billion of deposits to new competitors and transferred $15.3 billion. Panel B of Table 11 reports the same calculation at the two bounds obtained from voluntary sales: the loss is 20.8 percent equal-weighted and 29.4 percent deposit-weighted, against 32.5 percent using the estimate obtained on the divestitures themselves, which is the relevant one here and the largest of the three for the reason Section 4.4 gives.

What does the loss do to the index the agencies actually screen on? Concentration is nearly blind to the shortfall. Panel (b) of Figure 5 plots the difference between the realised and the scored county Herfindahl index across the 114 cells. It is centred near zero: the deposit-weighted mean gap is +36 points, the median cell +36, nine percent of cells are *negative*, and 96 percent lie below the 200-point trigger the screen is written on. The reason is mechanical. A concentration index is a function of the whole share distribution, and deposits that leave one firm largely reappear at others, so the index is close to invariant to χ; whether it rises or falls in a given county depends on whether the released deposits accrue to rivals or leave the market. What χ destroys is not the balance of the market but the scale of the particular competitor the remedy was designed to create. A screen written in terms of concentration therefore cannot detect that failure, which is one reason it has gone unremarked: the remedy passes its own test.

The prescription follows from (25). To deliver a competitor of realised scale d^* the divestiture must be written for

$$d \;=\; d^*/\chi, \tag{26}$$

reported as the last column of Table 11, Panel B: between 1.28 and 1.44 times the scored amount using the bounds from voluntary sales, and 1.51 times using the divestiture estimate. Panel (a) of Figure 6 draws (26) over the whole range of χ and shades the part of it my estimates cover, so that the factor can be read off rather than taken on faith; applied to the thirteen orders in the sample, the divestitures would have had to be written for $29 to $35 billion of deposits rather than the $23.0 billion they in fact required. Because $1/\chi$ is convex, the correction is disproportionately larger in exactly the deals where the base travels worst. Agencies need not abandon their screen; they need to gross up the divestiture, and to condition the gross-up on the identity of the acquirer, since Section 4.4 predicts and Appendix C confirms that an out-of-market buyer retains less.

Liebersohn (2024) studies the same institutional setting and finds that an antitrust intervention of this kind raises twelve-month certificate-of-deposit rates by 0.109 percentage points and six-month rates by 0.081. That estimate is a *realised* effect, measured on outcomes, so it already reflects $\chi < 1$. Had the divested block arrived intact, the same remedy would have delivered

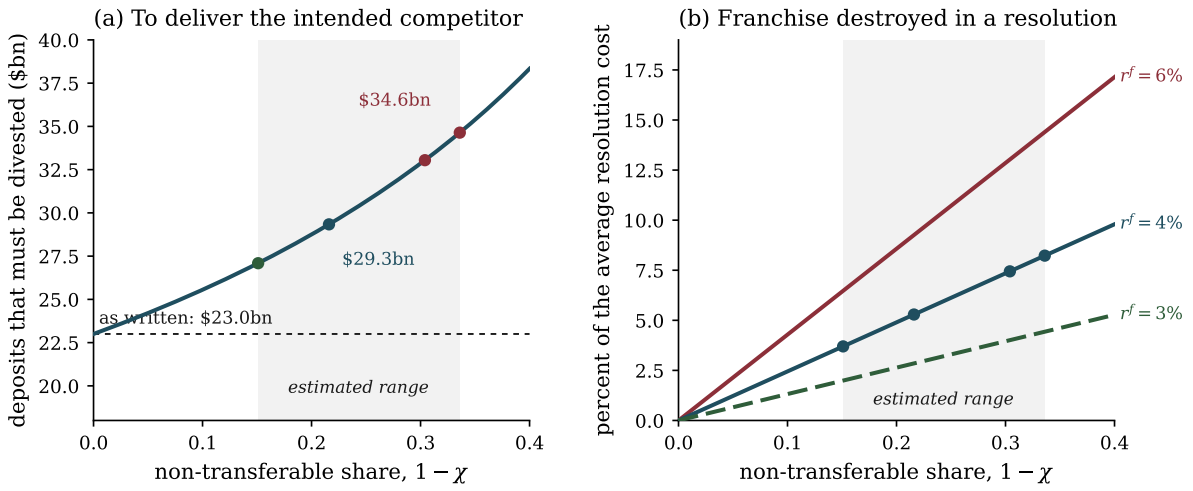


Figure 6: Both counterfactuals as a function of χ. The horizontal axis in each panel is the non-transferable share $1-\chi$, the one primitive the quantification rests on that is estimated rather than taken from the literature. The shaded band is the range spanned by the three readings used in the paper: the equal-weighted and deposit-weighted bounds from voluntary sales, equations (20) and (21), and the five-year estimate obtained on the mandated divestitures themselves. Markers sit at $1-\chi = 0.151$, 0.216, 0.304 and 0.336. **Panel (a).** The deposits a divestiture must be written for to deliver a competitor of the scale the thirteen actual remedies were scored to create, D_{div}/χ from equation (26), against the \$23.0 billion the orders in fact required. The curve is convex: the correction rises faster where the base is less transferable. **Panel (b).** Franchise value destroyed on transfer, $(1-\chi)\phi$ converted to a share of the 28 percent average resolution cost of Granja et al. (2017) at deposits of eighty percent of assets, drawn at three market rates. The slope is $\phi(r^f)$: at a market rate of three percent the destroyed franchise is at most five percent of the resolution cost even at the top of the estimated range, while at six percent it is more than three times that at every point in the range. The numbers in Section 5.3 and Section 5.4 are read off these curves.

$0.109/\chi$, that is between 0.139 and 0.164 percentage points, so depositors in remedied markets forgo

$$0.109 \times \left(\tfrac{1}{\chi} - 1\right) \in [0.030,\ 0.055] \text{ percentage points} \tag{27}$$

relative to the remedy as designed. The scaling in (27) assumes the rate benefit is proportional to the competitor's realised scale, which is a linear approximation and should be read as such. It is also the right way to use his estimate: his design deliberately excludes the divested branches and their buyers from the sample, so his coefficients describe what the surrounding market experiences while χ describes what happened to the instrument that produced it. His finding that divestitures do raise deposit rates on average and mine that they raise them by less than they are scored to are complements, not rivals.

5.4 What a Failed Bank's Franchise Is Worth to the FDIC

The second use is a valuation rather than a policy design. When a bank fails, the FDIC resolves it in most cases through a purchase-and-assumption transaction in which an acquirer takes the deposits, and it is required to choose the bid least costly to the deposit insurance fund. Bidders quote a deposit premium as a percentage of core deposits, and the agency's valuation of what it is selling treats the franchise as transferable. Granja et al. (2017) document that the average loss to the fund across 438 such resolutions between 2007 and 2013 was 28 percent of the failed bank's assets, and that the allocation is distorted because the natural high-value acquirer is often capital-constrained.

Section 4.4 adds a distinct and additive loss. The acquirer in a purchase-and-assumption transaction is typically without a local presence, so $\omega_B \approx 0$ and $\kappa = \chi$: it receives χ of the franchise and no more. Per dollar of the failed bank's deposits the destroyed franchise value is $(1-\chi)\phi$, which at (24) is

$$(1-\chi) \times 8.6 \ = \ 1.3 \text{ to } 2.6 \text{ cents per deposit dollar.} \tag{28}$$

Figure 7 plots (28) against the market rate. Two features matter. The franchise is worth more when rates are high, which is Drechsler et al. (2026)'s point that it has negative duration; and because the destroyed part is a fixed fraction of it, *the destruction is largest exactly when the franchise is most valuable*. At a market rate of one percent there is almost nothing to destroy. At four percent there is 8.6 cents per deposit dollar of franchise and 1.3 to 2.6 cents of it does not survive the sale. With deposits at roughly eighty percent of assets at the banks in Granja et al. (2017)'s sample, that is between 1.0 and 2.1 percent of assets, so franchise destruction on transfer accounts for something between four and seven percent of the average resolution cost they report, a component the least-cost calculation currently scores at zero. Panel (b) of Figure 6 shows how that share moves with both χ and the market rate. The two interact: at a market rate of three percent the destroyed franchise is at most five percent of the resolution

cost anywhere in the estimated range of χ, while at six percent it runs from six to fourteen percent across the same range, more than three times as large at every point, because the slope of panel (b) is $\phi(r^f)$. Resolutions cluster in the states where the number is large.

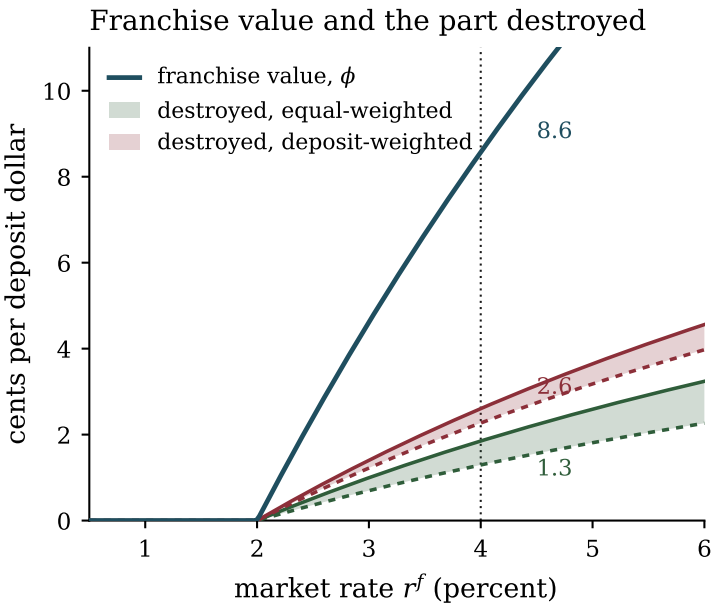


Figure 7: The deposit franchise and the part that does not survive a sale. The solid line is the franchise value per deposit dollar, equation (15), at the parameters of Drechsler et al. (2026): a deposit beta of 0.4, an operating cost of 1.2 percent and a decay rate of 10 percent. The two bands are the destroyed part, $(1-\chi)\phi$, at the equal-weighted and deposit-weighted bounds on $1-\chi$; within each band the solid edge is the upper bound and the dashed edge the lower. The dotted vertical line marks a market rate of four percent, at which the franchise is worth 8.6 cents per deposit dollar and between 1.3 and 2.6 cents of it does not survive a change of owner. Because the franchise has negative duration, destruction is largest when the franchise is most valuable.

Three implications follow. First, the least-cost test overstates what the agency can sell, by (28) per deposit dollar, and the difference falls on the insurance fund rather than on the acquirer. Second, the overstatement is larger for out-of-market acquirers, so the least-cost comparison across bids is not merely noisy but biased in favour of bidders who will destroy more: an in-market bidder with $\omega_B > 0$ delivers a higher realised franchise for the same quoted premium. Third, franchise value destroyed in a resolution is a real loss and not a transfer to the acquirer. Drechsler et al. (2026) show the franchise is valuable because banks pay below-market rates, and fragile because uninsured depositors can run, but their run mechanism maintains that it "can therefore be fully liquid in normal times yet fully illiquid in a run" (p. 1589), a claim for which the normal-times half is asserted rather than shown. Ordinary voluntary branch sales, with no run anywhere in sight, say otherwise. Jiang et al. (2024) likewise treat the destruction of franchise value as the outcome of a bad equilibrium and stop at the pre-resolution stage. The

calculation above says the destruction is mechanical and occurs in orderly resolution as well, and, by Figure 7, that it is largest in exactly the high-rate states in which resolutions cluster.

The same arithmetic bounds what a deposit franchise can be borrowed against. By (17) a lender can realise at most κ times the going-concern value, so a franchise worth 8.6 cents per deposit dollar to its incumbent is worth at most 6.0 to 7.3 cents to anyone else, and at most 5.7 cents when the only available buyers are out of market. This is a buyer-invariant reason a deposit franchise is not pledged or securitised at going-concern value, distinct from the buyer-constraint channel in Granja et al. (2017), and it does not require any party to be financially distressed.

6 Conclusion

Holding physical location, management, and posted rate sheets fixed, a transferred branch permanently loses roughly a fifth of its deposits. These balances remain within the local banking market, yet competitors do not absorb them in the share-proportional manner required by canonical discrete-choice models. What a change of owner severs is destroyed rather than reallocated. A deposit franchise is not an ordinary transferable asset; it is organization capital bound to the bank that assembled it.

That inalienability creates a buyer-invariant valuation wedge that matters for two pillars of U.S. banking regulation. Scoring merger divestitures on booked deposits overstates the competitive capacity delivered by a third to a half, and standard concentration screens miss the shortfall. Evaluating purchase-and-assumption bids under the statutory least-cost test assigns zero destruction to core deposits, ignoring a loss that accounts for four to seven percent of average resolution costs. Because destruction peaks in high-rate environments and hits out-of-market buyers hardest, mandated divestitures need to be grossed up and resolution valuations need to account for partial detachment rather than assume seamless transferability.

A deposit franchise can be bought, but not bought whole. Most of the base survives a sale, which is why branch purchase remains a real alternative to organic building; a non-transferable residual is nonetheless destroyed in the act of transfer. The same measurement is useful outside banking: installed customer relationships are a quantitative primitive for theories of intangible capital in which alienability has usually been assumed rather than measured.

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A Derivations

This appendix derives the statements in Section 4. Throughout, $D \equiv D_{b,\tau^-}$ denotes the transferred branch's deposits just before the transfer, $s = D/D_{mt}$ its share of the local market, and $o(\cdot)$ collects terms of higher order in s. Because every statement is local in s, the acquirer's posted yield and the size of the local market are held at their pre-transfer values; Section A discusses what relaxing that costs.

Equations (5), (6), (7), (9), (15) and (16) are definitions or primitives and are not derived. Equation (8) follows immediately from (7): since χ is defined as the surviving fraction of the branch's deposits, $\Delta \log D_b = \log(\chi D/D) = \log \chi$. What requires argument is the claim accompanying it, that no argument of (5) enters. A transfer leaves the location and the local market unchanged, places the branch on the acquirer's rate sheet so that y is common to the acquirer's branches, and moves the branch between the two parties' branch counts so that n_{jm} rises for the acquirer by exactly what it falls for the seller. Every argument of σ_{bt} is therefore either unchanged or inherited, so (5) alone implies $\Delta \log D_b = 0$; the entire response comes from (7), and neither α nor λ nor the competitor rate appears in it.

The same argument establishes that nothing else in the market moves to first order. The arguments of (5) are posted yields and branch counts, and a transfer changes neither for any third party. Any second-round rate adjustment is $O(a)$ by (14) and therefore $o(s)$ here.

A. Equation (10): what the within-buyer coefficient measures

Let D_{own} be the deposits at the acquirer's other branches in the market. Those branches share the posted yield, the competitor rate and the local market with the transferred branch, so absent the transfer their deposits would evolve identically in logs; that is what makes them a counterfactual. By (9) they receive $\omega_B(1-\chi)D$ in levels, so

$$\Delta \log D_{\text{own}} \;=\; \frac{\omega_B(1-\chi)D}{D_{\text{own}}} + o(s).$$

Subtracting this from (8) gives (10). Because $\omega_B \geq 0$ and $\chi < 1$, the subtracted term is nonnegative, so $\beta^{\text{within}} \leq \log \chi$ and $1 - \exp(\beta^{\text{within}})$ is an upper bound on $1-\chi$. Adding an estimate of $\Delta \log D_{\text{own}}$ obtained against a benchmark that receives none of the released mass returns $\log \chi$.

B. Equations (11) and (12): the two rival predictions

With a bank-specific component. Let the rivals in the estimation sample hold ζD_{mt} in aggregate and rival k hold D_k. Under (9) rivals collectively receive $\omega_R(1-\chi)D$, distributed pro rata among

them, so k receives $\omega_R(1-\chi)D \cdot D_k/(\zeta D_{mt})$ and

$$\Delta \log D_k \;=\; \frac{\omega_R(1-\chi)D}{\zeta D_{mt}} \;=\; \frac{\omega_R(1-\chi)}{\zeta}\, s,$$

which is (11): linear in s, independent of D_k. Setting $\omega_R = 1$ gives the full-reallocation slope $(1-\chi)/\zeta$ of (4).

Under the demand system alone. Suppose the branch sheds $(1-\chi)sD_{mt}$ and that (5) governs where those deposits go. In a discrete-choice system the depositors re-choose among the remaining alternatives with probabilities proportional to the remaining shares. Excluding the branch they have left, the recipient pool has size $(1-s)D_{mt}$, so rival k receives $(1-\chi)sD_{mt} \cdot D_k/[(1-s)D_{mt}]$ and

$$\Delta \log D_k \;=\; \frac{(1-\chi)s}{1-s},$$

which is (12): convex in s, again independent of D_k.

Comparison. The ratio of (12) to (11) is $\zeta/[\omega_R(1-s)]$, which equals ζ/ω_R at $s = 0$ and is strictly increasing in s. The two therefore separate only where s is large, and the power of the intensity split is concentrated in the upper tail.

C. Equation (13): the posted spread

The owner posts one yield y over its network. Let $D_j(y)$ be the deposits it holds at that yield and Ω the shadow value, in the same units as the spread, of the attachment that a unit of current deposits generates for the future. Per-period profit is $\varsigma D_j(y) = (r^f - y)D_j(y)$, and the owner also values the future attachment, so it chooses y to maximise

$$(r^f - y)\, D_j(y) \;+\; \Omega\, D_j(y).$$

The first-order condition is

$$-\,D_j \;+\; \big(r^f - y + \Omega\big)\,\frac{\partial D_j}{\partial y} \;=\; 0 \qquad \Longrightarrow \qquad \varsigma + \Omega \;=\; \frac{D_j}{\partial D_j/\partial y}.$$

By (6) the semi-elasticity of the owner's deposits in its posted yield is $\partial \log D_j/\partial y = \alpha$, so $D_j/(\partial D_j/\partial y) = 1/\alpha = \lambda$ and $\varsigma^\star = \lambda - \Omega$, which is (13). Setting $\Omega = 0$ gives $\varsigma^\star = \lambda$, the deposit markup of Wang et al. (2022). Note that α enters here as the semi-elasticity of the *stock* of deposits in the posted yield, which is the object (5) defines and Section 5 estimates; no separate elasticity of a flow is required.

D. Equation (14): the bound on the deposit-rate response

With λ constant, (13) implies that any movement in the posted spread is a movement in Ω, $\Delta\varsigma = -\Delta\Omega$. Because the yield is posted over all branches, Ω is a function of the owner's total

deposits D_j and not of any single branch. A transfer raises D_j by the arriving fraction of the acquired block, κD with κ as in (16), that is by a proportion κa of the acquirer's deposits with $a = D/D_j$. Expanding Ω to first order in $\log D_j$,

$$|\Delta\varsigma| \;=\; \Big|\frac{\partial \Omega}{\partial \log D_j}\Big|\,\kappa\, a \;+\; o(a),$$

which is (14). The quantity response in (8), by contrast, is $\log \chi$ regardless of a: it does not vanish as the acquisition becomes small relative to the acquirer, while the deposit-rate response does.

E. Equations (17) and (18): the wedge and the trade condition

By (15) deposits D operated by j are worth $\phi_j D$. The incumbent holds D and values the branch at $\phi_s D$. An acquirer retains χD at the branch and receives a further $\omega_B(1-\chi)D$ at its other branches in the market, both of which it operates; the remaining $(\omega_R + \omega_0)(1-\chi)D$ accrues to rivals or leaves the market and is worth nothing to it. Its valuation is therefore $\phi_b[\chi + \omega_B(1-\chi)]D = \phi_b \kappa D$. At $\phi_b = \phi_s = \phi$ the difference is

$$W \;=\; \phi D(1-\kappa) \;=\; \phi D\big[1 - \chi - \omega_B(1-\chi)\big] \;=\; \phi(1-\chi)(1-\omega_B)D,$$

which is (17), strictly positive iff $\chi < 1$ and $\omega_B < 1$, and independent of the identity of the acquirer except through whether it has other branches in the market. For the pledgeability claim, a lender taking the franchise as collateral can realise at most what a buyer will pay, $\phi_b \kappa D$, which at $\phi_b \le \phi_s$ is at most κ times the going-concern value $\phi_s D$.

A transfer occurs only if the acquirer's valuation weakly exceeds what the seller forgoes by selling, $\phi_b \kappa D \ge \phi_s D$, that is $\phi_b/\phi_s \ge 1/\kappa$, which is (18). Since κ is increasing in χ, the threshold $1/\kappa$ falls as χ rises, so the set of (ϕ_b, ϕ_s) pairs for which no trade occurs widens as χ falls.

F. Competitive weight, divestitures, and entry

Competitive weight. By (8) the transferred branch operates χD under its new owner, so a statistic computed on pre-transfer deposits assigns it weight D where the realised weight is χD. For a concentration index increasing in the dispersion of shares, replacing the divested block's weight D by χD while the divesting party's own position is unchanged raises measured concentration relative to the scored value, by an amount increasing in $1-\chi$ and in s.

Divestitures. Two channels raise the measured decline above the voluntary case. First, a remedy that requires the divested branches to come from the non-surviving party, forbids soliciting their customers, and forbids transferring their accounts out of the divested branch removes every route by which the released mass could land inside the network of a firm that retains a local presence; hence $\omega_B \to 0$, $\kappa \to \chi$, and by (17) the wedge attains its maximum

$\phi(1-\chi)D$. Second, if χ is itself lower for an acquirer without a local presence, then $1-\chi$ is larger in the mandated case. The first channel is a consequence of the model together with the remedy's rules; the second is a hypothesis, not a derivation. Both push the measured decline above the voluntary case and neither can push it below.

Entry. An entrant with no local presence has $\omega_B = 0$, because it has no other local branches on which the released mass could land, so buying a base A leaves it with $\kappa A = \chi A$. Its position relative to an incumbent holding A is therefore $\chi < 1$, and it remains below the incumbent for as long as the loss persists. At $\chi = 1$ its post-purchase position equals the incumbent's, so by the common-rate feature of Section 4.1 it would post the incumbent's yield and no premium would remain.

G. On the maintained conditions

Equation (8) holds the acquirer's posted yield and the size of the local market fixed. In a general equilibrium both move. The acquirer's optimal spread shifts because its total deposits have changed, and (14) bounds that shift at first order in a, an order of magnitude below the quantity response at the transfer sizes observed in the data. The local market shrinks because $\omega_0(1-\chi)D$ has left it, a change of order $\omega_0(1-\chi)s$ in D_{mt}; this enters every branch's deposits proportionally through (5) and is therefore absorbed by the county $\times$ year effects in (1).

B Additional Robustness Checks

This appendix collects voluntary-transfer supporting estimates and the pipe A/B/C mechanism legs. The appendices are organized around three complementary lenses: (i) owner–branch cutoff and buyer-side absorption on voluntary sales (this section); (ii) antitrust, FDIC, and commercial M&A readings of the same technology (Table B7 and Appendix C); and (iii) incomplete property rights in the main text. All tables below use log branch deposits as the outcome unless noted. Within this appendix the tables proceed by estimand: transfer robustness; contamination and buyer absorption; density heterogeneity in voluntary pipe A; institutional loss metrics that bridge to Appendix C; rival responses; and selection into the within-buyer sample.

Table B1 collects specification, sample, normalisation, horizon, and fixed-effect checks that keep the same estimand as Table 3: a branch that changes hands. Across panels the post-transfer coefficient remains negative and precisely estimated, typically between about -0.17 and -0.25. Table B2 keeps the same estimand and splits on seller tenure and branch age; the proportional loss is flat, the prediction of a constant-χ technology and a rejection of past rate-setting accumulation on the *transfer* margin (the level of the stock is the tenure share profile in Table 5). Table B3 splits instead on pre-deal deposit size (treated terciles only; all within-buyer controls retained): proportional losses are $+0.155$, -0.286 and -0.505 across terciles, and the implied absolute loss rises from about \$8 million to \$31 million in the upper two.

Table B4 keeps the same estimand and asks whether the quantity loss is movement along a demand curve: if the acquirer simply pays depositors less than the seller did, deposits fall without any shift of the installed base. On the matched branch stack, adding the Call Report deposit rate of whichever bank owns the branch that year leaves the event-study path essentially unchanged (the coefficient at $e = +4$ moves from -0.193 to -0.191), and adding the owner's insured small-time rate does the same. The rate itself enters positively, as demand requires, but it does not carry the transfer effect. The control is bank-wide, the only resolution the Call Reports afford; the within-buyer design already holds the posted rate fixed by construction wherever two branches share an owner and a county, so this exercise is a check against seller-to-buyer rate changes rather than a substitute for branch-level deposit rates.

Table B5 turns to a different estimand on the same outcome and asks whether the *comparison* branches in the main design themselves gain after a deal. Buyer-side gains appear against matched no-transfer counties and, more strongly, against the same bank's quiet counties (on a rejected pre-period). Seller-side retained branches do not gain on a clean pre-period. These results do not overturn the sign of Table 3, but they imply that $1 - \widehat{\chi}$ from that table alone is an upper bound; Table 4 reports the informative range $1 - \chi \in [0.151, 0.216]$ (Section 3.2.4).

Table B6 splits the matched buyer-absorption design in Table B5 by the acquirer's pre-deal local branch network at the buyer–county–cohort level. Equal-count terciles (rank–`qcut` on 253 unique cohorts) give $e = +5$ effects of 0.107, 0.052, and 0.092 ($N_{\text{trt}} = 84/104/247$; n_{buyer} ranges 1/1–2/2–10); the pattern is not strictly monotone in density, but thick markets remain above the middle bin. Panel B retains value-based thin/thick splits ($n = 1$ vs. $n \geq 3$). This is voluntary pipe A mechanism evidence, not a DoJ remedy sample; mandated-loss comparisons by acquirer prior presence are in Appendix C.

Table B7 maps the same transfer technology into three institutional objects that Appendix C then unpacks deal by deal: (i) the antitrust office lens (voluntary within-buyer loss of about 22%; DOJ mandated about 34%); (ii) the commercial M&A buyer-books range $1 - \chi \in [0.151, 0.216]$ after netting absorption; and (iii) no-prior transfers versus matched counties (about 12%). The FDIC P&A parallel is in Appendix D.

Table B8 reports pooled fixed-effect variants and a placebo for rival branches. The intensity split that rejects proportional reallocation is in the main text (Table 8).

The within-buyer design requires a comparison branch that the buyer already operates in the same county. Table B9 splits clean single-change transfers over 1999–2019 into that identifying sample and transfers with no buyer presence at $t-1$. The main sample is 24% of clean transfers and a quarter of transfer county–years; it sits in thicker markets (more local branches and banks, higher population, lower HHI, smaller transferred share). Table B10 then compares no-prior acquisitions to ownership-stable branches in propensity-matched no-transfer counties. The post-period coefficient is -0.140 (0.009) and the long difference at $e = +5$ versus $e = -1$ is -0.129 (0.015), the same sign as the within-buyer loss of about -0.24, at a smaller magnitude,

and not used to recalibrate χ. Deposit runoff after a voluntary ownership change is therefore not confined to the counties in which the within-buyer design is available.

Table B1: Robustness of the Branch-Level Transfer Effect

	(1)	(2)	(3)
Dependent Variable		log(branch deposits)	
Panel A. Clustering (PSM sample, $e = +4$)			
$e = +4$	-0.186^{***}	-0.186^{***}	-0.186^{***}
	(0.009)	(0.014)	(0.014)
Cluster	Branch	Seller bank	Seller × buyer
Panel B. Propensity-score matched sample ($e = +4$)			
$e = +4$	-0.180^{***}	-0.186^{***}	-0.187^{***}
	(0.007)	(0.009)	(0.009)
Branch × Cohort FE	YES	YES	YES
Year × Stack FE	YES	NO	NO
County×Year×Stack FE	NO	YES	YES
Bank FE	NO	NO	YES
Panel C. Never-transferred controls ($e = +4$)			
$e = +4$	-0.203^{***}	-0.220^{***}	-0.195^{***}
	(0.019)	(0.020)	(0.015)
Comparison pool	All matched	Never transferred	Never transferred
Branch FE	NO	NO	YES
Panel D. Free pre-trend normalisation ($e = +4$)			
$e = +4$	-0.193^{***}	-0.220^{***}	-0.175^{**}
	(0.026)	(0.028)	(0.077)
Normalisation	$[-5, -4]$	$[-5, -4]$	$[-5, -4]$
Sample	Buyer	Buyer (alt.)	Seller retained
Panel E. Pre-deal growth controls ($e = +4$)			
$e = +4$	-0.307^{***}	-0.259^{***}	-0.250^{***}
	(0.006)	(0.006)	(0.006)
Pre-growth controls	NO	YES	YES
Panel F. Longer event windows			
Coefficient	-0.218^{***}	-0.187^{***}	-0.162^{**}
	(0.031)	(0.050)	(0.070)
Horizon	$e = +1$ (± 10)	$e = +10$ (± 10)	$e = +15$ (± 15)
Panel G. Party comparison at $e = +5$			
$e = +5$	-0.241^{***}	-0.243^{***}	-0.067
	(0.032)	(0.033)	(0.061)
Side	Buyer	Buyer	Seller
County×Year×Stack FE	NO	YES	YES
Previous-owner FE	NO	YES	YES

Note: All panels share the same outcome and the same treatment (a branch that changes hands) and report the post-transfer deposit change under alternative inference, samples, normalisation, controls, horizons, and fixed effects. Panels A–E use the matched branch stack unless noted; Panel G uses the party stack of Table 3. $e = -1$ is the omitted base period except where a demeaning window is stated.

Standard errors in parentheses (clustering as indicated in each panel; Panel G is two-way clustered on both parties). * $p < .10$, ** $p < .05$, *** $p < .01$.

Table B2: Heterogeneity by Tenure and Branch Age

Dependent Variable	Tercile 1	Tercile 2	Tercile 3
	log(branch deposits)		
Panel A. Seller operating tenure (oten)			
$e = +5$	-0.285^{**}	-0.207^{***}	-0.229^{***}
	(0.123)	(0.060)	(0.062)
Median tenure (years)	3	6	12
Panel B. Branch age (bage)			
$e = +5$	-0.292^{***}	-0.203^{***}	-0.216^{***}
	(0.091)	(0.063)	(0.053)
Median age (years)	5	21	69
County×Year×Stack FE	YES	YES	YES
Within-tercile controls	YES	YES	YES

Note: Same outcome and treatment as Table 3. Terciles are formed at $e = -1$; controls are restricted to the same tercile. Panel A splits on bank-specific operating history; Panel B splits on location age, which survives the sale. A constant-χ transfer technology predicts a flat proportional profile across terciles. The level of the stock is in Table 5.
Outcome demeaned on $e \in [-5, -4]$. Standard errors in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$.

Table B3: Transfer Loss by Pre-Deal Deposit Size

Dependent Variable	Tercile 1	Tercile 2	Tercile 3
	log(branch deposits)		
$e = +5$	0.155^{***}	-0.286^{***}	-0.505^{***}
	(0.037)	(0.034)	(0.037)
Median deposits at $e = -1$ ($000)	10,363	31,870	78,276
Implied absolute loss ($000)	—	7,938	31,046
Treated branches at $e = -1$	11,517	11,516	11,516
Comparison branches at $e = -1$	8,135	7,979	8,768
Branch × cohort FE	YES	YES	YES
Year × cohort FE	YES	YES	YES

Note: Within-buyer sample. Terciles are formed from *treated* branches' deposits at $e = -1$ only; all of the buyer's other branches in the same county enter as controls, regardless of control size (a within-tercile control screen would break that comparison). The outcome is log deposits with branch×cohort and year×cohort effects (omitted $e = -1$). The implied absolute loss is $(1 - e^{\hat{\beta}})D_{-1}$ at the treated tercile median, reported only when $\hat{\beta} < 0$.
Standard errors clustered on the buyer in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$.

Table B4: Transfer Loss Controlling for the Owner's Deposit Rate

	(1)	(2)	(3)
	No control	+ owner rate	+ small-time rate
Dependent Variable	log(branch deposits), demeaned		
$e = -5$	-0.007	-0.013^{***}	-0.012^{**}
	(0.005)	(0.005)	(0.005)
$e = -4$	0.004	0.000	-0.000
	(0.004)	(0.004)	(0.004)
$e = -3$	0.015	0.005	0.004
	(0.010)	(0.009)	(0.009)
$e = -2$	0.019	0.014	0.013
	(0.013)	(0.014)	(0.014)
$e = +0$	-0.145^{***}	-0.148^{***}	-0.151^{***}
	(0.019)	(0.020)	(0.020)
$e = +1$	-0.186^{***}	-0.188^{***}	-0.189^{***}
	(0.021)	(0.022)	(0.022)
$e = +2$	-0.193^{***}	-0.202^{***}	-0.202^{***}
	(0.023)	(0.024)	(0.024)
$e = +3$	-0.199^{***}	-0.200^{***}	-0.200^{***}
	(0.025)	(0.025)	(0.025)
$e = +4$	-0.193^{***}	-0.191^{***}	-0.192^{***}
	(0.026)	(0.027)	(0.027)
Owner's deposit rate		0.029^{***}	0.029^{**}
		(0.010)	(0.013)
Owner's small-time rate			0.001
			(0.009)
County×Year×Stack FE	YES	YES	YES
Observations	296,740	282,870	281,756
Adjusted R^2	0.129	0.133	0.136

Note: Same treatment as Table 3 (a branch that changes hands), on the propensity-matched branch stack with the outcome demeaned within unit×stack on $e \in [-5, -4]$ so that $e = -1$ is not the normalisation. Column (1) is the baseline event study; column (2) adds the Call Report all-in deposit rate of whichever bank owns the branch that year; column (3) further adds the owner's insured small-time rate. Rates are bank-wide. Coverage of the owner rate is about 79% of branch-years. Standard errors clustered on the seller bank in parentheses.

* $p < .10$, ** $p < .05$, *** $p < .01$.

Table B5: Absorption at Non-Transferred Branches

	(1)	(2)	(3)
Dependent Variable		log(branch deposits)	
Panel A. Buyer other branches			
$e = +5$	0.079^{***}	0.342^{***}	0.167^{***}
	(0.029)	(0.041)	(0.037)
Comparison	Matched counties	Quiet counties	Matched (demeaned)
Bank×Year×Stack FE	NO	YES	NO
Panel B. Seller retained branches			
$e = +5$	0.031	0.031	0.066
	(0.047)	(0.055)	(0.055)
Comparison	Quiet counties	Quiet (county SE)	Quiet (demeaned)
Bank×Year×Stack FE	YES	YES	YES

Note: Same outcome as Table 3, but a *different* estimand: deposits at branches that did *not* change hands. Panel A uses the buyer's other branches in the county; Panel B uses seller-retained branches. A positive coefficient indicates that the comparison group in the main design may absorb part of the detached base, so $1 - \widehat{\chi}$ from Table 3 alone is an upper bound. Table 4 nets out matched buyer absorption (Section 3.2.4).
Standard errors in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$.

Table B6: Buyer Absorption by Local Network Density

	(1)	(2)	(3)	(4)
Dependent Variable		log(branch deposits)		
Panel A. Stacked event study at $e = +5$, density terciles				
Sample	All matched	T1 (n=1)	T2 (n=1–2)	T3 (n=2–10)
Treat × e=+5	0.079^{***}	0.107^{**}	0.052	0.092^{**}
	(0.029)	(0.056)	(0.049)	(0.043)
Treated units at $e = -1$	435	84	104	247
Panel B. Robust checks: thin versus thick local networks				
	(1)	(2)		
Sample	Thin ($n = 1$)	Thick ($n \geq 3$)		
Treat × e=+5	0.086^{*}	0.111^{**}		
	(0.045)	(0.056)		
Treated units at $e = -1$	148	186		
Branch × Cohort FE	YES	YES	YES	YES
State × Year × Stack FE	YES	YES	YES	YES
Bank FE	YES	YES	YES	YES

Note: Panels A–B re-estimate buyer-side absorption on the matched absorb stack (Table B5, column 1 / Table 4, Panel A column 2) with $e = -1$ omitted. Panel A column (1) reproduces the baseline $e = +5$ effect; columns (2)–(4) restrict treated buyer-own branches to equal-count terciles of pre-deal local branch count n_{buyer} at $t-1$ (rank–`qcut` on 253 unique buyer–county–cohorts at $e = -1$, then merged to branches; T1 $n \in \{1\}$, T2 $n \in \{1, 2\}$, T3 $n \in [2, 10]$; $N_{\text{trt}} = 84/104/247$). Panel B reports the thin/thick splits aligned with value-based $n = 1$ and $n \geq 3$ ($N_{\text{trt}} = 148/186$); all matched controls enter every column. Continuous density interactions (demeaned $\ln(1+n)$, n, and deposit capacity) are insignificant or sign-unstable and are omitted; estimates are archived in `output/omegab/`. Reported as voluntary pipe A evidence; contrast with mandated-loss tables in Appendix C. Not used to recalibrate χ.
Standard errors clustered at the county level in parentheses.
* $p < .10$, ** $p < .05$, *** $p < .01$.

Table B7: Institutional Loss Metrics

	(1) Antitrust office lens	(2) Commercial M&A buyer books	(3) Out-of-market / no prior
Dependent Variable		log(branch deposits)	
Panel A. Log loss at $e = +5$			
Voluntary within-buyer	-0.243^{***}	—	—
	(0.033)	—	—
DOJ mandated (excl. Fleet)	-0.409^{***}	—	—
	(0.056)	—	—
Net of buyer absorption	—	-0.164^{***}	—
	—	(0.044)	—
No buyer prior presence	—	—	-0.122^{***}
	—	—	(0.017)
Panel B. Implied loss share $1 - \exp(\Delta \log D)$			
Voluntary within-buyer	0.216	—	—
DOJ mandated (excl. Fleet)	0.336	—	—
Net of absorption (lower)	—	0.151	—
Within-buyer upper (same deals)	—	0.216	—
No buyer prior presence	—	—	0.115
Informative range	Office: 0.216–0.336	$1 - \chi \in [0.151, 0.216]$	0.115
Source	Tables 3, C1	Table 4	Table B10
FDIC-style failed-bank parallel	$\Delta \log D = -0.611^{***}$; $1 - \exp(\Delta \log D) = 0.457$; Table D1, col. (1)		

Note: Three institutional readings of transfer loss. Column (1) takes the object as deposits at the transferred / divested *office*: voluntary within-buyer DiD (Table 3 / Table 4 Panel A column 1) and DOJ mandated divestitures excluding Fleet (Table C1, column 4). Pipe A contamination makes the voluntary office reading an upper bound on destruction; the DOJ reading is closer to full office-level loss.

Column (2) is the commercial M&A buyer-group lens: the published range $1 - \chi \in [0.151, 0.216]$ nets matched buyer absorption out of the within-buyer gap (Table 4 Panel B).

Column (3) reports the no-prior-presence long difference (Table B10, column 4), a different estimand (transferred office versus matched no-transfer counties), not a within-buyer comparison. Table D1 reports the matched-county parallel on FDIC P&A failures ($e = +5$ long difference).

Standard errors in parentheses where the underlying DiD reports them. The Panel A net-of-absorption standard error treats the transfer and absorption components as independent. * $p < .10$, ** $p < .05$, *** $p < .01$.

Table B8: Rival-Branch Responses: Specs and Placebo

	(1)	(2)	(3)
Dependent Variable		log(branch deposits)	
Panel A. Pooled rivals under alternative FE			
Transferred × Post	0.018^{***}	0.018^{***}	0.020^{**}
	(0.005)	(0.005)	(0.008)
State×Year×Stack FE	YES	YES	YES
Rival-bank FE	NO	YES	NO
Bank×Year×Stack FE	NO	NO	YES
Panel B. Baseline vs. placebo at $e = +5$			
$e = +5$	0.031^{***}	-0.007	0.017^{*}
	(0.009)	(0.017)	(0.010)
Design	Acquisition counties	Placebo split	Binary treatment

Note: Same outcome as Table 7. The intensity split that tests the logit reallocation restriction is in Table 8 and Figure 4b. Panel A collapses the post period under alternative fixed effects. Panel B contrasts the baseline acquisition-county effect with a placebo that randomly splits control counties.

Standard errors clustered on the county in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$.

Table B9: Transfers With and Without Buyer Prior Presence

	Universe	Main ID sample	No prior presence
Panel A. Sample composition			
N transferred branches	46,145	10,942	33,112
Share of clean transfers (%)	100.0	23.7	71.8
N county–years	12,679	3,192	9,993
Share of transfer county–years (%)	100.0	25.2	78.8
Panel B. Relative size of acquirer and seller			
Acquirer larger (national branches, %)	94.0	—	94.3
Median acquirer/seller branch ratio	4.3	—	4.3
Coverage of size measure (%)	98.7	—	98.7
Panel C. Branch and market characteristics			
Branch deposits at $t-1$ (mean, \$000)	64,278	62,351	64,487
Branch deposits at $t-1$ (median, \$000)	33,526	34,356	33,290
Share of county deposits (mean)	0.034	0.015	0.040
Share of county deposits (median)	0.007	0.003	0.009
County HHI (mean)	0.185	0.164	0.193
County branches (mean)	187.1	281.9	155.5
County banks (mean)	28.2	37.5	25.0
County population (median)	318,232	590,636	251,740
Metro share (pop $\geq$ 50k, %)	81.4	90.3	77.9
County deposit growth $t-5 \to t-2$ (mean log)	0.143	0.175	0.132
Buyer age (mean years)	103.2	101.7	103.5
Seller age (mean years)	94.5	102.6	92.2
Buyer log assets (mean)	16.83	16.58	16.94
Seller log assets (mean)	15.72	15.43	15.88
Buyer national branches (mean)	790.5	725.5	833.5
Seller national branches (mean)	490.3	338.9	556.5

Note: Clean single-change transfers, $t \in [1999, 2019]$, with the same ownership screen as the within-buyer panel. The main ID sample is a transferred branch whose buyer has at least one non-transferred own branch in the same county. No prior presence means the buyer operated no branch in the county at $t-1$ (71.8% of clean transfers; 78.8% of transfer county–years). The main ID and no-prior columns do not partition the universe: 4.5% of transfers have buyer prior presence but no usable within-county control branch. Panel B uses the national branch-count ratio of acquirer to seller at the transfer (coverage as reported); "larger" is the share with ratio > 1 among transfers with a measured ratio. Size ratios for the main ID column are omitted because that subsample is identified from the party stack rather than from the transfer list alone. Deposits are SOD branch totals (\$ thousands). Metro is county population $\geq$ 50,000 at $t-1$.

Table B10: No Buyer Prior Presence: Stacked DiD

Dependent variable	(1)	(2)	(3)	(4)
	log(branch deposits)			
Horizon	Post ($e \geq 0$)	Post ($e \geq 0$)	$e = +5$ vs $e = -1$	$e = +5$ vs $e = -1$
Treat × Post	-0.140^{***}	-0.128^{***}	-0.129^{***}	-0.122^{***}
	(0.009)	(0.010)	(0.015)	(0.017)
Branch × cohort FE	YES	YES	YES	YES
Year × cohort FE	YES	NO	YES	NO
State × year × cohort FE	NO	YES	NO	YES
Observations	334,192	333,956	57,488	57,434
Counties (clusters)	2,607	2,600	2,506	2,495
Treated branches at $e = -1$	5,024	5,024	5,024	5,024

Note: Treated units are clean voluntary transfers where the buyer had *no* other branch in the county at $t-1$. Controls are ownership-stable branches in propensity-matched no-transfer counties (covariates: log county deposits, branches, banks, HHI, and pre-growth at $t-2$; caliper 0.2 SD of the propensity logit), capped at 20 controls per treated branch within each matched pair. Standard errors clustered on county in parentheses. The within-buyer loss in Table 3 is about -0.24 for reference. These estimates are not used to recalibrate χ.

C Mandated Branch Divestitures

The main estimates use voluntary branch sales. A concern is that the parties choose which branches to sell and when, so that the within-buyer loss in Table 3 partly reflects selection rather than the transfer technology of equation (8). This appendix reports parallel exercises on mandated ownership change and the institutional readings in Table B7. The tables follow a fixed order: (i) mandated divestiture DiD (Table C1); (ii) loss by acquirer prior presence on divested offices (Table C2); (iii) pipe A capacity on those offices under corrected SOD switch timing (Table C3); (iv) HHI counterfactuals that treat only χ of divested deposits as retained (Table C4). Voluntary buyer-absorption heterogeneity by local density is in Appendix B (Table B6), because it estimates matched voluntary pipe A, not DoJ remedies. The FDIC failed-bank parallel remains in Appendix D. None of these estimates recalibrates χ.

I collect Antitrust Division press releases from 1999–2008 whose titles announce bank-branch divestitures, parse the attached branch lists, and match addresses to the FDIC Summary of Deposits. The matched sample covers 13 deals and 539 branches (match rate 86%). The Fleet/BankBoston 1999 divestiture alone accounts for about half of the matched branches, so every specification is reported with and without that deal. Controls are ownership-stable branches in the same state(s) as the divested offices, excluding the treated counties, capped at fifteen controls per treated branch within the deal cohort. The panel is stacked by deal with an eleven-year window around the event year; for prior-network and pipe A exercises below, event time follows the SOD ownership switch (`switch_ty`), not the press-release year.

Table C1 reports the stacked difference-in-differences for mandated divestitures. Under branch×cohort and year×cohort effects with county clustering, the post coefficient is -0.307 (0.043) on the full sample and -0.336 (0.043) excluding Fleet; the long difference at $e = +5$ versus $e = -1$ is about -0.40 in either sample. Adding state×year×cohort effects leaves the post estimates near -0.34 and -0.32. Figure C1 shows the event study. Pre-period coefficients on the preferred (ex-Fleet) sample are within about 0.02 of zero; the path falls at $e = 0$ and settles near -0.40 by year five. The voluntary within-buyer loss at the same horizon is -0.24. Mandated divestitures therefore produce runoff that is at least as large, and the conclusion that a deposit franchise is not transferred one-for-one does not appear to be an artefact of voluntary selection. Two limitations remain: the design has only thirteen deals, and out-of-market buyers under a structural remedy are not the same economic object as the commercial sales that identify χ in the text.

For divested offices in Panels A–B, event time is re-anchored to the SOD ownership-switch year (`switch_ty`) rather than the DoJ press-release year. Switches occur on average 1.3 years after announcement; press-year timing misaligns treatment and attenuates mandated loss. Among matched DoJ branches, 370 of 539 switch owners in SOD; about half of those switchers have an acquirer with a pre-existing local branch (Table C2, Panel C). Table C2 Panels A–B formalize the institutional comparison on those divested *offices*. Panel A splits mandated loss by acquirer

Table C1: Mandated Branch Divestitures

	(1)	(2)	(3)	(4)
Dependent Variable	log(branch deposits)			
Sample	All deals	Excl. Fleet	All deals	Excl. Fleet
Horizon	Post ($e \geq 0$)	Post ($e \geq 0$)	$e = +5$ vs $e = -1$	$e = +5$ vs $e = -1$
Treat × Post	-0.307^{***}	-0.336^{***}	-0.404^{***}	-0.409^{***}
	(0.043)	(0.043)	(0.050)	(0.056)
Branch × Cohort FE	YES	YES	YES	YES
Year × Cohort FE	YES	YES	YES	YES
Observations	39,130	33,226	6,426	5,652
Counties (clusters)	791	741	725	699
Treated branches at $e = -1$	523	261	523	261
Deals	13	12	13	12

Note: Stacked DiD on DoJ-mandated divestiture branches (1999–2008), matched to FDIC Summary of Deposits. Controls are ownership-stable same-state branches outside treated counties (capped 15:1). Columns (1)–(2): post = $1\{e \geq 0\}$; columns (3)–(4): long difference at $e = +5$ vs $e = -1$. Standard errors clustered at the county level in parentheses. Column (2) excludes Fleet. Figure C1 reports the event study. Not used to recalibrate χ.
* $p < .10$, ** $p < .05$, *** $p < .01$.

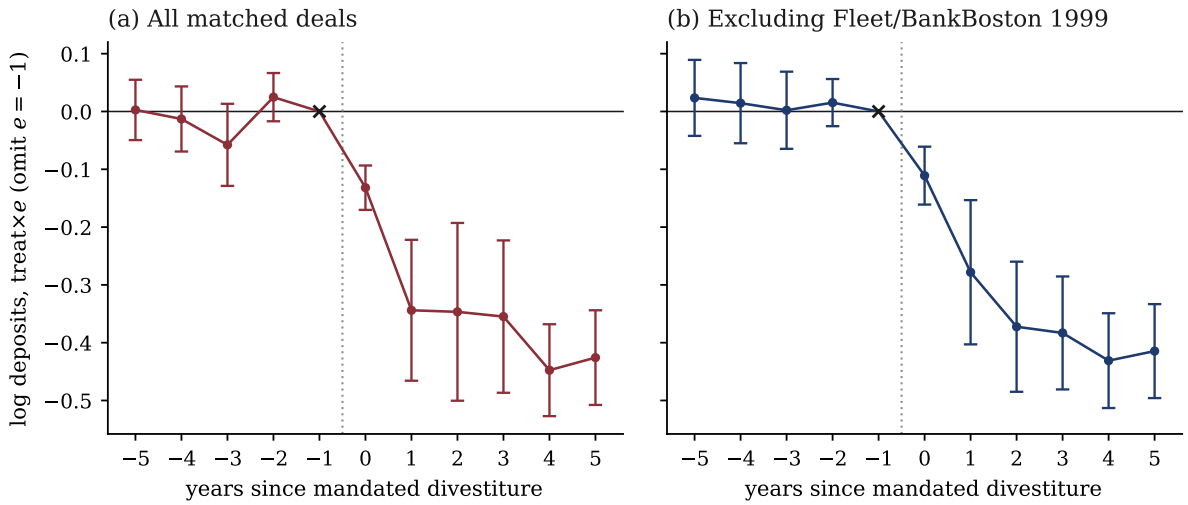


Figure C1: Mandated branch divestitures. Event-study coefficients from a stacked regression of log branch deposits on treat×e indicators with $e = -1$ omitted (cross). Branch×cohort and year×cohort effects; bars are 95% confidence intervals clustered on the county. Panel (a): all 13 matched DoJ deals (523 treated branches at $e = -1$). Panel (b): excluding Fleet/BankBoston 1999 (261 treated). Controls are ownership-stable same-state branches outside treated counties.

prior presence: runoff is −0.34 post when the buyer already operated locally versus −0.41 when it did not; the long difference at $e = +5$ is −0.21 and −0.46, respectively. Panel B places the voluntary within-buyer loss at −0.24 beside these mandated readings at matched horizons. When the acquirer had no local network, mandated loss exceeds the voluntary headline; when it already operated locally, loss is attenuated, the opposite of voluntary pipe A absorption, which remains positive in both thin and thick markets (Table B6).

Table C2: Mandated Divestiture Loss by Acquirer Prior Presence

	Prior local branch		No prior local branch	
	(1)	(2)	(3)	(4)
Dependent Variable	log(branch deposits)			
Panel A. Divestiture offices × acquirer prior network				
Horizon	Post ($e \geq 0$)	$e = +5$ vs $e = -1$	Post ($e \geq 0$)	$e = +5$ vs $e = -1$
Treat × Post / e=+5	−0.335***	−0.212**	−0.410***	−0.462***
	(0.047)	(0.108)	(0.039)	(0.055)
Branch × Cohort FE	Y	Y	Y	Y
State × Year × Cohort FE	Y	Y	Y	Y
Adjusted R^2	0.877	0.818	0.877	0.819
Observations	29,334	4,880	30,136	5,094
Counties (clusters)	625	592	661	622
Treated branches at $e = -1$	139	139	180	180
Panel B. Alignment with voluntary within-buyer transfer loss				
	(1)	(2)	(3)	(4)
	Voluntary	DOJ, no prior		DOJ, prior
Horizon	$e = +5$	Post ($e \geq 0$)	$e = +5$	$e = +5$
$\Delta \log D$	−0.243***	−0.410***	−0.462***	−0.212**
	(0.033)	(0.039)	(0.055)	(0.108)
Branch × Cohort FE	Y	Y	Y	Y
State × Year × Cohort FE	N	Y	Y	Y
County × Year × Stack FE	Y	N	N	N
Previous-owner FE	Y	N	N	N
Cluster level	Buyer × seller		County	
Panel C. Acquirer prior presence among matched DoJ branches				
Matched DoJ branches	539			
Ownership switch observed in SOD	370 (68.6%)			
Share of switchers with prior branch	50.8%			
Median prior local branches (switchers)	1			
Share with ≥ 3 prior branches	48.9%			

Note: Panels A–B: DoJ-mandated branches that switch owners in SOD, split by acquirer prior presence at $t-1$. Event time follows `switch_ty` (mean lag 1.3 years from the press release). Controls: ownership-stable same-state branches outside treated counties (stacked; capped 15:1). Panel B places the voluntary within-buyer loss at $e = +5$ (Table 3) next to Panel A mandated readings. Panel C summarizes acquirer prior presence. Standard errors clustered at the county level in parentheses for DoJ columns; the voluntary column clusters at buyer×seller.
* $p < .10$, ** $p < .05$, *** $p < .01$.

Table C3 re-estimates pipe A absorption on the acquirer's *pre-existing* branches in counties where a mandated office switches to that acquirer with prior local presence. The main correction

relative to earlier drafts is event timing: ownership switches in SOD occur on average 1.3 years after the DoJ press-release year, so event time is re-anchored to `switch_ty`. Under corrected timing, pipe A absorption is negative and significant in the full sample, not near zero; the ex-Fleet subsample is imprecise ($N = 39$). Column (4) reproduces the voluntary benchmark from Table B6, Panel B for contrast.

Table C3: DoJ Pipe A Absorption: Event-Time Correction and Robustness

	(1)	(2)	(3)	(4)
Dependent Variable	log(branch deposits)			
Panel A. Acquirer pre-existing branches (pipe A capacity)				
Sample	All prior deals	Excl. Fleet	Thick ($n_{\text{acq}} \geq 3$)	Voluntary benchmark
Event time	SOD switch year (`switch_ty`)			Deal year
Horizon	$e = +5$			$e = +5$
Treat × e=+5	-0.190^{***}	0.048	-0.195^{***}	0.079^{***}
	(0.065)	(0.136)	(0.065)	(0.029)
Branch × Cohort FE	YES	YES	YES	YES
State × Year × Cohort FE	YES	YES	YES	YES
Bank FE	NO	NO	NO	YES
Adjusted R^2	0.877	0.901	0.877	0.934
Observations	21,172	5,918	21,141	201,858
Counties (clusters)	290	233	287	1,096
Treated branches at $e = -1$	433	39	429	435

Note: Pipe A units are the acquirer's pre-existing branches in counties where it already operated at $t - 1$ and a mandated office switched to that acquirer with prior local presence. Event time is re-anchored to `switch_ty` (mean lag 1.3 years from the DoJ press-release year). Column (4) reproduces the voluntary buyer-own benchmark from Table B6, Panel A column (1). Standard errors are clustered at the county level in parentheses.
* $p < .10$, ** $p < .05$, *** $p < .01$.

Antitrust screens typically treat divested-branch deposits as fully retained by the divestiture buyer ($\chi = 1$). Table C4 recomputes county deposit-market HHI when only a fraction χ of those deposits survives on the divested offices and $(1 - \chi)$ leaves the market, using the $1 - \chi$ range from Table 4. Across 116 matched deal–county markets (13 DoJ deals, 1999–2008), mean divestiture relief (the ΔHHI avoided relative to an unremedied merger) falls by about 7–10% when χ moves from one to the net-of-absorption bound ($\chi = 0.849$) or the upper-bound loss reading ($\chi = 0.784$). Post-merger HHI with divestitures is correspondingly higher by about 1.6–2.4%. The exercise is illustrative: I do not observe deal-specific divestiture buyers in every county and do not apply it to voluntary sales, which rarely publish branch-level remedy maps.

D Failed-Bank Purchase-and-Assumption Resolutions

The main text uses voluntary branch sales and antitrust divestitures. This appendix asks the same deposit-franchise question on a third ownership change: FDIC purchase-and-assumption (P&A) resolutions, where the failed charter disappears and a healthy institution assumes the deposits. Out-of-market acquirers cannot reroute deposits through an existing local network

Table C4: Deposit-Market HHI under Incomplete Transfer

Transfer assumption	(1)	(2)	(3)
	Share χ of divested-branch deposits retained post-sale		
Panel A. All matched DoJ deal–county markets			
	$\chi = 1$	$\chi = 0.849$	$\chi = 0.784$
Pre-merger HHI		0.222	
Post-merger HHI (no remedy)		0.283	
Post-merger HHI (with divestiture)	0.228	0.232	0.234
ΔHHI vs. pre (with divestiture)	0.0059	0.0095	0.0114
HHI relief from divestiture	0.0550	0.0514	0.0496
Relief shrinkage vs. $\chi = 1$	–	6.6%	10.0%
Post-HHI inflation vs. $\chi = 1$	–	1.6%	2.4%
Deal–county markets		116 (13 deals)	
Panel B. Excluding Fleet/BankBoston 1999			
	$\chi = 1$	$\chi = 0.849$	$\chi = 0.784$
Pre-merger HHI		0.233	
Post-merger HHI (no remedy)		0.297	
Post-merger HHI (with divestiture)	0.238	0.242	0.244
ΔHHI vs. pre (with divestiture)	0.0050	0.0089	0.0109
HHI relief from divestiture	0.0590	0.0551	0.0530
Relief shrinkage vs. $\chi = 1$	–	6.6%	10.0%
Post-HHI inflation vs. $\chi = 1$	–	1.6%	2.5%
Deal–county markets		97 (12 deals)	

Note: Deposit markets (counties) with at least one branch listed in a DoJ divestiture order (1999–2008) and matched to SOD. Pre-merger HHI uses observed county deposit shares in the deal's SOD year. The no-remedy case merges the two parties with the largest divested-branch deposit totals; the remedy case assigns share χ of divested deposits to a separate buyer and lets $(1 - \chi)$ leave the market. HHI relief is ΔHHI(no remedy)$-\Delta$HHI(with divestiture). Columns (2)–(3) use the $1-\chi$ range from Table 4; shrinkage and inflation rows compare to the $\chi = 1$ baseline (column 1). Illustrative only; does not recalibrate χ.

(pipe A ≈ 0), so office-level loss should resemble the antitrust divestiture lens rather than the voluntary within-buyer upper bound.

I download FDIC failure records with `RESTYPE1=PA` for 1999–2019, map failed-bank CERT to RSSD, and retain deals whose *entire* branch network in SOD transfers from the failed RSSD to a single acquirer in one cohort year with no seller branches remaining (acquirer identity taken from SOD, not FDIC FIN, which rarely matches SOD RSSD). The matched sample contains 197 failures and 598 branches, concentrated in 1999–2017 (crisis cohorts). No failures have an acquirer with branches in the seller's home state at $t-1$; 151 of 598 branch cohorts have same-county buyer controls.

Table D1 reports three parallels on log branch deposits. Column (1) matches the no-prior stacked design: treated P&A offices versus ownership-stable branches in propensity-matched no-transfer counties. Column (2) uses within-buyer comparisons where available. Column (3) estimates buyer-side absorption on the acquirer's pre-existing county branches relative to the same bank's quiet counties (Table 4, Panel A column 2).

The matched-county long difference at $e = +5$ is -0.611 (0.080) on 391 treated branches (implied loss share 46% if taken literally). Event-study pre-periods in the matched stack trend upward ($+0.19$ to $+0.34$ over $e = -5$ to -2), so the static long difference should be read with caution despite the large post-period decline. Where the within-buyer comparison exists (151 branches), the same horizon gives -0.653 (0.122). Buyer absorption on pre-existing county branches is 0.000 (0.000) with only twelve acquirer clusters, consistent with pipe A ≈ 0 but imprecise.

These magnitudes are closer to the antitrust office lens (Table B7, column 1) than to the voluntary within-buyer upper bound, and pipe A is not identified for most P&A deals because acquirers lack a local network. The exercise does not re-estimate χ; it checks whether the transfer-technology sign survives on FDIC resolutions.

Table D1: Failed-Bank P&A: Parallel Deposit DiD

	(1) Matched counties	(2) Within buyer	(3) Buyer absorption
Dependent variable	log(branch deposits)		
Panel A. Long difference at $e = +5$ vs $e = -1$			
Treat × Post	−0.611∗∗∗	−0.653∗∗∗	0.000
	(0.080)	(0.122)	(—)
Comparison group	Matched counties	Same-county own	Quiet counties
Treated units at $e = -1$	391 branches	150 branches	329 branches
Panel B. By acquirer geography (column (1) design)			
Out-of-state acquirer		0.000 (—)	
In-state acquirer		— —	
Branch × cohort FE	YES	YES	YES
State × year × cohort FE	YES	NO	NO
County × year × cohort FE	NO	YES	YES
Cluster level	County	Buyer	Buyer
FDIC P&A failures matched	197 deals, 598 branches		
Buyer county prior (n)	151 of 598; out-of-state 100%		

Note: Treated branches are offices of FDIC purchase-and-assumption failures whose entire charter transfers in SOD to a single acquirer (seller CERT → RSSD; acquirer from SOD). Column (1) parallels the no-prior design (Table B10): ownership-stable branches in propensity-matched no-transfer counties. Column (2) uses the within-buyer comparison where the acquirer already operated in the county (151 branches). Column (3) estimates whether the acquirer's *other* county branches gain (pipe A); it is estimable only on that subsample. Out-of-state acquirers have no pre-existing county network, so pipe A is mechanically near zero for 100% of deals. Matched-county pre-periods trend upward (+0.19 to +0.34 over $e = -5$ to -2). Estimates are not used to recalibrate χ.

Buying the Deposit Franchise: The Inalienability of Customer Capital in Banking

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AFA Student Poster Session · JEL G21, L11, D43 · deposit franchise · customer capital · bank entry

A young bank pays more for deposits because it lacks a local customer base. Buying an established branch is a natural way to acquire that base. Using U.S. branch sales since 1994, this paper asks how much of a deposit franchise can be bought. A transferred branch **permanently loses about a fifth of its deposits**; what leaves is not absorbed by the buyer's other local offices, the seller's retained branches, or rivals in share proportions. Extending Wang et al. (2022) with inalienable customer capital that only partly survives a change of owner. Forced branch sales after mergers lose customers the same way, so the buyer retains only $15.3 billion of the $23.0 billion required and delivers a third to a half less competition than the Department of Justice planned. Failed-bank sales to an out-of-market buyer destroy 1.3 to 2.6 cents of franchise value per deposit dollar, equal to four to seven percent of average DIF cost but recorded as zero in the official cost comparison. **Customer capital does not transfer intact with ownership.**

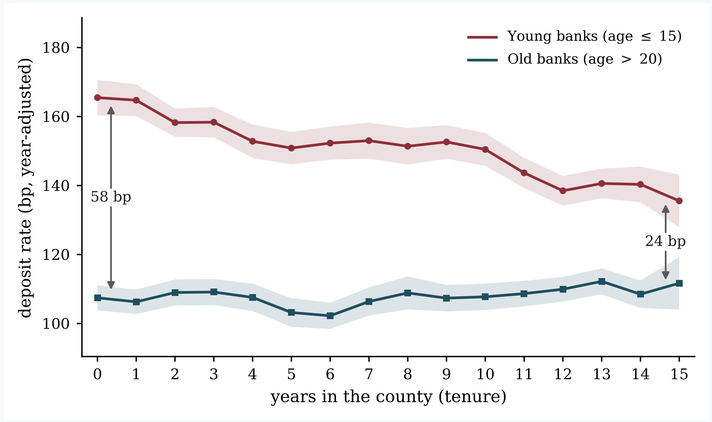
15--22%
of the depositor base does not survive once buyer absorption is netted out $(1-\chi \in [0.151, 0.216])$

68 bp
extra paid for deposits by a bank in its first two years, same county and year

4.4%
rival gain in the top intensity tercile — share-proportional reallocation requires 9.5%

$15.3 of $23.0B
deposit capacity DoJ remedies delivered, against what the orders assumed

Motivation



Year-adjusted all-in deposit rates by county tenure. Young ≤ 15 years; old > 20. Gap remains ≈24 bp after 15 years.

In its first two years a bank pays **68 bp** more than an incumbent over twenty years old in the same county and year. The gap is still **30 bp** at ages 11–20; controlling for assets leaves four fifths. At $500m of deposits that spread costs **$3.4m a year**.

Bank age (years)	Gap (bp)
0–1 / 2–3 / 4–5	67.9 / 61.1 / 53.0
6–10 / 11–20	42.5 / 30.4

> Same county, same year — not macro, not size. Literature attributes the gap to a missing local customer base.[1]

[1]DeYoung and Hasan (1998); DeYoung (1999). Outside banking: Bronnenberg, Dubé and Gentzkow (2012); Foster, Haltiwanger and Syverson (2016).

Research question

This paper investigates **how much of a deposit franchise can be bought** by measuring the inalienability of bank customer capital, and **quantifies its implications for deposit market dynamics and regulatory policy evaluations**.

Research method

Empirics. Compare a transferred branch to the *buyer's own* branches in the same county. They share management, brand, network, local market and the posted rate sheet. **The one remaining difference is a customer base assembled under a previous owner** — so β_k isolates bank-specific customer capital. Then the rest of the county; then rivals.

$$\log D_{bgt} = \sum_{k=-5,\,k\neq -1}^{5} \beta_k(\text{Transferred}_{bg} \times \mathbf{1}[e_{bgt}=k]) + \eta_{bg} + \tau_{c(b)tg} + \upsilon_{o(b)} + \varepsilon_{bgt}$$

Model. Keep Wang et al. (2022) discrete-choice deposit demand — rates and branch counts. **Add inalienable (bank-specific) customer capital** (Dou 2021; Dou et al. 2021) that only partly survives a change of owner:

$$D_{b,\tau^+} = \chi\, D_{b,\tau^-}, \quad R_b \equiv (1-\chi) D_{b,\tau^-}$$

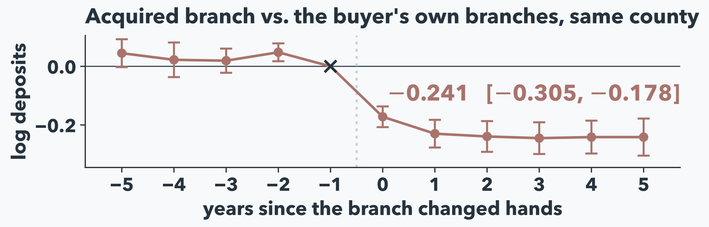
$$R_b \to \underbrace{\omega_B R_b}_{\text{buyer network}} + \underbrace{\omega_R R_b}_{\text{rivals}} + \underbrace{\omega_0 R_b}_{\text{out of base}}$$

$$W = \phi(1-\chi)(1-\omega_B) D_b > 0$$

With that addition, the model accounts for three facts that follow from incomplete transferability. First, deposits fall at the transferred branch even though the buyer inherits the premises, network, and rate sheet. Second, rivals do not reabsorb what leaves the office in proportion to market shares. Third, a branch is worth strictly less to any acquirer than to its incumbent, generating a buyer-invariant valuation wedge that peaks when the buyer has no local presence.

> A deposit franchise is only partly buyable: customer capital does not transfer intact with ownership.

A transferred branch loses about a fifth

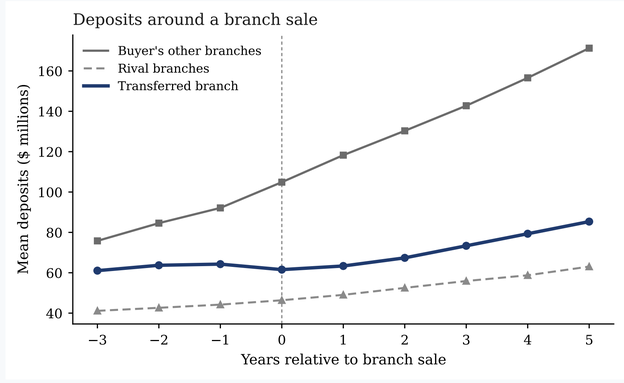


Within-buyer comparison; 600,997 obs.; 95% intervals; $e=-1$ omitted.

Relative to the buyer's other branches in the same county — management, brand, local conditions, and the posted rate sheet held fixed — the acquired office loses roughly a fifth of its deposits within two years. Net of absorption at the buyer's other local offices, fifteen to twenty-two percent of the depositor base does not survive as a transferable franchise. Consolidation is unlikely: in 72% of clean transfers the buyer held no prior branch in the county, and matched county aggregates show that local branch counts do not fall while deposits in the rest of the county do not decline.

> About one fifth of the depositor base is lost at the transferred office.

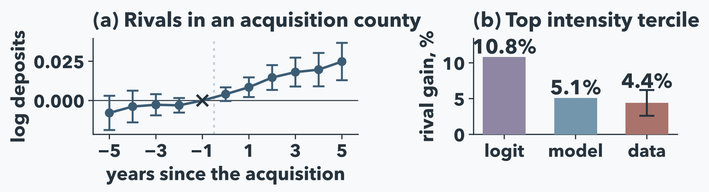
The loss is permanent — and flat in tenure



Extending the window, about one fifth of the initial decline is undone over fourteen years and the rest remains, so the loss is permanent rather than temporary runoff. Splits by seller tenure and by branch age yield proportional losses that do not differ at conventional significance — a flat profile that matches a constant multiplicative transfer rule, not a past rate-setting accumulation story in which longer tenure would raise the fraction lost.

> Permanent deposit loss; constant χ, not tenure-driven runoff.

Rivals do not reclaim in share proportions



492,251 obs.; 2,344 county clusters.

Rival offices whose owners are neither buyer nor seller rise only modestly against matched counties that see no transfer. The increase accumulates slowly, with nothing jumping at the sale date. That pooled gain is not the sharp test. If severed deposits were recaptured in proportion to the shock, the rival response would rise with the transferred bundle's county share. It does not. In the top intensity tercile, rivals recover about half of what share-proportional reallocation requires:

Intensity $\bar{s}$	0.036	0.138	0.350
Share-proportional needs	$+1.0\%$	$+3.7\%$	$+9.5\%$
Data	**+2.8%**	**+1.5%**	**+4.4%**

> Rejects share-proportional discrete-choice reallocation: part of the base is destroyed with the ownership change, not released for rivals to reclaim.

Calibration

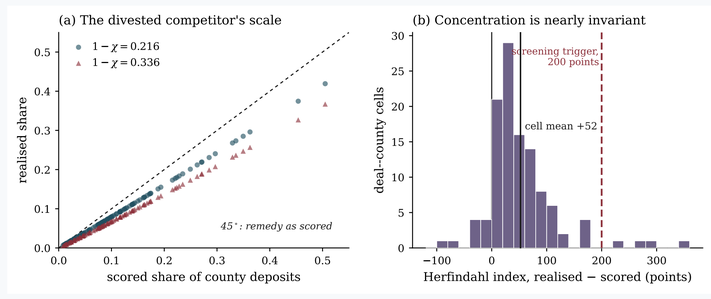
Four moments fix the transfer block. Franchise value $\phi = 8.6¢$ per deposit dollar.

Object	Identified from	Value
$1-\chi$, equal-weighted by deposit volume	within-buyer, net of absorption; branch deposits as weights	$[0.151, 0.216]$; $[0.265, 0.304]$
Rivals ω_R	pooled rival gain	0.49
Buyer network ω_B	county aggregate	0.14
Out of base ω_0	residual	0.37

Held out. At the top intensity tercile the franchise model predicts **5.0%** against **11.6%** under share-proportional recapture; the data give **4.4%** $[2.6, 6.2]$ — inside the first, outside the second.

> The wedge is buyer-invariant and peaks when the buyer has no local presence — the buyer type remedies select.

Application: DoJ merger remedies



13 DoJ deals; 527 branches; $23.0bn. Worst case by design ($\omega_B = 0$, $\kappa = \chi$).

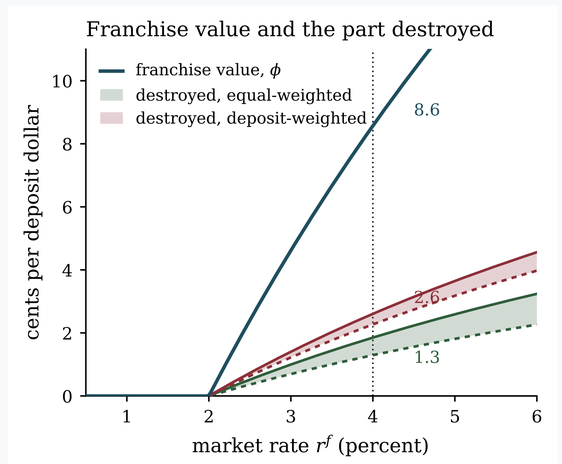
Assumed on the order at **9.2%** of county deposits; the buyer operates **6.2%**. **$23.0bn written, $15.3bn delivered.**

Reading of $1-\chi$	0.216	0.304	0.336
Realised county share, %	7.3	6.5	6.2
Gross-up required	×1.28	×1.44	×1.51

HHI gap averages $+36$ points; 96% of cells below the trigger.

> **The buyer retains only $15.3 billion of the $23.0 billion required and delivers a third to a half less competition than the Department of Justice planned.**

Application: FDIC failed-bank resolution



Out-of-market P&A; $\phi = 8.6¢$ (Drechsler et al. 2026).

> 1.3 to 2.6 cents of franchise value destroyed per deposit dollar — four to seven percent of the average cost a bank failure imposes on the deposit insurance fund, but recorded as zero in the official cost comparison.

Takeaway

A deposit franchise is only partly buyable: customer capital does not transfer intact with ownership. Standard demand systems and regulatory valuations that treat the depositor base as fully transferable miss the loss. These findings highlight the importance of incorporating this non-transferable residual as an explicit consideration — in structural deposit demand, merger-remedy design, and least-cost resolution — rather than treating transfers as if the franchise arrived whole.

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