Social Identity, Market Memory, and First-Mover Advantage

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Abstract

Considerable attention has been paid to whether there is a "first-mover advantage" among organizations. Various technical mechanisms have been considered as the basis for such an advantage, such as learning head-starts and early movement into preferred parts of a market. Here, it is argued that first movers may also benefit from a social identity advantage if they remain focused on their original market, because being identified as the original in a market implies authenticity. When first-mover advantage is based on such an identity, market memory is important. Early on, audiences distinguish the originality of the first mover compared to those who come later. But as time passes, such differences in the distant past become less recognizable. Consequently, identity-based first-mover advantages are likely to be limited in space and time. Using data on retail banks over a century, we find evidence of this pattern in models of organizational failure and growth – and that such first-movers are constrained in their ability to expand beyond the locations where their identity is established. The results suggest the usefulness of a sociological understanding of the first-mover strategy.

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The "first-mover advantage" is among the most widely recognized ideas in the area of business strategy. The press often identifies being first-to-market as a reason for continued success among organizations, an important claim because it implies that the risks of pioneering are likely to be worthwhile. Yet the scholarly literature is more circumspect in its treatment of the first-mover advantage. It is not unusual to see academic papers that regard first-mover advantage to be a myth, or at least to be less evident than popular treatments would suggest. Much of this academic work has attempted to determine whether particular mechanisms favor first movers, such as head-starts where learning matters, occupancy of better market positions, or advantages over later entrants who must convince market players to switch (Lieberman and Montgomery, 1988, 1998). So the debate over first-mover advantage has centered on the particular mechanisms that might be set in motion when an organization is first in a market.

For all the attention paid to the consequences of being first in a market, less work has asked the prior question: whether there may be an advantage to being first in a market, *per se*. By considering the importance of social identity, we argue that for some organizations, being first in a market *in and of itself* can be an advantage. Apart from generating technical advantages such as greater knowhow or superior market position, being known as "the original" in a market implies authenticity – a social identity of value in itself. Sociologists, especially Merton (1968, 1993), have found perceptions of one's originality to have considerable importance. Value comes from being socially acknowledged as "the original" because of the authenticity that this designation implies

(Stinchcombe, 1965). Such value is seen perhaps most strikingly in the sociology of science, where originality is praised disproportionately, and consequently debates over idea origination ring loud (Merton, 1968). Similarly, business firms often make claims of being "the original" because of the authenticity that such claims imply. These ideas suggest an interesting possibility with regards to the first-mover advantage: Might being first-to-market create an advantageous social identity?

What makes this question especially interesting is that social consensus about originality often is incorrect, especially with the passage of time. Merton (1968) notes this tendency in the sociology of science where scholars with a reputation for important, original work end up being given undue credit when they jointly author research. And, with the passage of time, the collective memory of who was the originator of an idea fades away – to the point where social consensus about originality may be incorrect (Merton, 1993). Similarly, market memory is notoriously error prone regarding the question of who was the first mover – with current-time perceptions about who was first in a market often biased toward survivors. Add to this the well-known tendency for multi-product firms to represent brands, falsely, as original, and it seems likely that important audiences doubt the authenticity of such claims – especially as time passes and market memory fades.

Here, we address these ideas empirically by exploiting a data set that is particularly well suited to the study of first movers – the hundreds of local retail banking markets in California over most of the 20th century. These data allow us to distinguish the banks that operated solely within a single local banking market, and to contrast them to the large multi-branch systems that were not identified with any one locale. And the

data allow us to trace over time the fates of hundreds of local-market first movers, and to compare them to other organizations that did not enter until after these local markets were established. First, we develop our arguments in a way that can be modeled empirically.

Originality and First-Mover Advantage

An organization's identity can serve as an important source of advantage – so long as the organization remains consistent with the expectations that go with an identity (Hannan et al., 2007). Important audiences make sense out of organizations based on their identities. A key question, then, is whether organizational identities conform to the social categories we use for sense making and classification (Hsu, 2006; Hsu et al., 2009). For instance, Zuckerman (1999) found that firms suffer from an "illegitimacy discount" when they operate in combinations of industries that conflict with socially established expectations. In such cases, organizations are devalued when their actions do not conform to the expectations that we associate with their identity. By contrast, organizations that remain true to the expectations associated with their identities benefit by being seen as authentic (Hsu, 2006; Tripsas, 2008).

The importance of identity becomes greatest when an organization's authenticity comes into question. For instance, Carroll and Swaminathan (2000) found evidence of an illegitimacy discount in the beer industry among so-called contract brewers – organizations that claim to be craft brewers but that in fact contract out to others to brew their beer. Such posers, once outed, generate powerful negative reactions from audiences such as consumers and experts. In fact, Carroll and Swaminathan found that mass producers have been attempting to conceal their affiliation with their craft-brew brands in

an attempt to avoid such a backlash. Key here is not that there is a penalty just for failing to conform to an identity, but that the penalty is especially strong for those who make what are found to be false identity claims. As Goffman (1974) notes in his description of "muffing," audiences see even small expectation violations as indicating that much greater falsehood may be at work.

Among the most clearly authentic identity claims is that of "the original." Audiences judge the authenticity of an organization's identity claims by referring to features thought to be necessary for such claims to be true – so called "test codes" (Hannan et al, 2007). We propose that observing an organization to be the original in a market reinforces the perceived authenticity of its identity claim. Stinchcombe (1965: 174) elaborates on this special case, arguing that the first instance of a given form of organization in a given place earns for that organization considerable prestige. He reasons that the first organization of its kind in a given place can help to define its own social position in that context. First-movers benefit from helping to define the social roles and expectations associated with a given organizational form in a given setting. The resulting prestige, power, and wealth, Stinchcombe argues, are an important source of stratification favoring pioneers. In this way, the status benefits to the original are a special case of the "Matthew effect" – wherein high status actors benefit disproportionately from their prestige (Podolny, 2005; Merton, 1968).

Not all organizations can enjoy the identity of an original, however. In order to be tightly linked to a market's identity, an organization cannot be all things to all people. Organizations with a low grade of membership in a particular market – those that are spread across many other markets too – cannot legitimately make the same identity

claims as can those who are fully specialized to a particular market (Hannan et al., 2007; Pontikes, 2009). The specialized first mover in a market was born there "de novo," and so builds an identity in sync with its place of birth (McKendrick et al., 2003). By contrast, the organization that moves in "de alio" from elsewhere – and continues to operate in other markets – is less clearly identified with the market it has entered (Carroll et al., 1996). A similar finding comes from Sullivan's (1992) analysis of "brand extensions," which benefit from early market entry less than "new name" brands for which no other identity claims have been made. For an original organization clearly identified with a particular market, birthright confers the distinction of being authentically "of" that market.

In this way, originality enhances both an organization's authenticity and its uniqueness – in that the original in any market is uniquely authentic. As Heimer (2001) elaborates using examples at various levels of analysis, the most powerful identity claims are those that qualify one for category membership while at the same time providing biographical contrast to others in the category. Applying this idea to first movers, the pioneering original gains both the legitimacy that goes with category membership and an advantageous contrast as uniquely authentic. So we expect:

Hypothesis 1: Among single-market organizations, first movers survive and grow in that market at a greater rate than later entrants.

The authentic first mover is known by those who witness its origins. But such knowledge is limited, since as time passes the claim of originality cannot be directly

verified. Heimer (2001) notes that such an identity claim typically is understood through relating biographical accounts that highlight the uniqueness of the subject. And the most direct evidence of such accounts is held by those who witnessed the origins of the first mover. After that, the collective memory of the first mover will fade, or even become biased or incorrect. Returning to Merton's observations, our collective memory of "the original" is error prone as time passes, because others come along with competing claims of originality and because first-hand memories of the original become scarce. The problem of inaccurate collective memory is played out most ironically in Merton's (1993) tracing of Newton's "standing on the shoulders of giants" aphorism to earlier roots. Relatedly, Merton notes that as ideas come to be incorporated widely in prevailing thinking, authorship of these ideas becomes less known – so-called "obliteration by incorporation" (Merton, 1949). More generally, the process of "objectification" – where social facts become accepted without acknowledgement of authorship – is a defining characteristic of institutionalization (Berger and Luckmann, 1967; Meyer and Rowan, 1977). So although the social identity of the "authentic original" may be valuable, time renders inaccurate our collective memory of who, in fact, was the original. So an identity-based first-mover advantage is limited by the passage of time, as the market's memory fades.

The problem of fading market memory should have affected the local retail banks that we study. In our review of historical archives, we often found accounts featuring the authentic originality of pioneering retail banks, replete with narratives about the formation and development of these organizations. But these accounts were written in archival documents, and as time has passed important audiences have no way to directly

test the accuracy of the originality claims made by banks. In fact, by the end of the 20th century, originality claims by banks in the United States were implausibly common – with hundreds of banks including in their names the word "first." As a consequence of its overuse and lack of verifiability, just the claim of being "first" lacks the distinctiveness that Heimer argues is necessary for an identity to be considered authentic. More believable, in fact, are the rare cases where banks accurately record their true genealogical history, complete with the lack of originality that such histories so often imply. The most well-known example of this sort in recent years is the "Fifth Third Bank" in Ohio, a name that is often discussed in the industry because it accurately reflects the derivative history so common among banks. So it is that originality claims are likely to lose their meaning as time passes among important audiences:

Hypothesis 2: Over time, the survival and growth advantages of single-market first movers decline.

Combined, Hypotheses 1 and 2 depict the first-mover advantage as following a pattern very different that that proposed in most of the recent research on this topic. Most of the literature, focusing as it does on learning or market position advantages, identifies situations where market position, large market share, or learning gives the first-mover an enduring edge (e.g. Lieberman, 1989; Robinson and Min, 2002; Magnusson et al., 2009; Usero and Fernandez, 2009). But we predict an advantage that fades with the market's memory, a prediction more in line with studies that observe time-varying effects of market entry strategy (Romanelli, 1989; Tufano, 1989; Boulding and Christen, 2003). In

sum, we think that an identity-based first mover advantage is limited in space – in that it goes to the market specialist only – and in time.

Even as the memory of originality fades over time, the bank's name will remain. In some cases, banks named themselves after their local community. We are intrigued that this legacy of a bank's initial identification with its market could have enduring effects. As an identity claim, naming an organization after its market may benefit an organization in terms of survival and growth within that market. But at the same time, such a claim by its nature is likely to constrain the bank from growing beyond its birth market. So we will investigate whether banks named after their local community are advantaged within that community, but are constrained in their ability to grow into other communities. Of course, a bank could change its name – as many did over the span of the 20th century. But it will be interesting to see whether those that remained identified reaped advantages within – and constraints beyond – their local market.

Modeling the First-Mover Advantage among California Banks

The 20th century retail banking markets of the State of California are an ideal context to study the first-mover advantage, because the state contained 828 distinct banking markets over that time. Many industries contain distinct, geographically defined markets, a structure reinforced both by the importance of physical location and by social structures (Sorenson and Stuart, 2001). By their nature, 20th-century retail banking markets were clearly geographically defined (Greve, 2002). Each of California's markets was identified distinctly in our data source, which was published twice annually over the century. (See the Data section for more details.) By reading through those data, we were

able to describe the entry and exits of all banks into and out of all of these markets over the period 1900-1990. This time period includes the first entry into nearly all of these markets, because California changed from being sparsely populated and largely rural in 1900 to being much more developed and urbanized by 1990 (Fischer and Hout, 2006). So we were able to capture the development of California's many localized banking markets since their inception.

Central to the development of banking in California were the single-market banks. These banks existed alongside the large, multi-location branch systems and served a distinct market niche of their own. Prominent local bankers typically funded important improvements in a locale, and were seen as pillars of the community (Mayer, 1974). Discourse on the role of banks and bankers, historically, typically framed local banks and local bankers as working for the betterment of the community with which they were identified: as "men who command the confidence of the communities in which they were located" (Pomeroy, 1914). In contrast to the robber-baron image often associated with the large money-center banks, local bankers were held in high esteem – coming in near the very top in occupational prestige surveys during the mid-20th century (NORC, 1947). Identified with the local market, these bankers were known to command the loyalty of better customers within the community (Mayer, 1974) – and typically could make important credit decisions using tacit information from their own networks and those of their boards (Mizruchi and Sterns, 2001). In these ways, single-market banks of the 20th century would have been able to legitimately identify with the local community, and make the originality claims of a first-mover.

These local-market banks and the large branch systems co-existed throughout the 20th century in California, as summarized in Figures 1 and 2. While branch systems grew over the century and came to include some very large, multi-market organizations, single-market banks were numerous. And although there was a clear shift toward branch banking in terms of the numbers of establishments, single-market banks remained a viable form of banking over the century – even experiencing surges in numbers during the 1960s and 1980s. In light of our theory, the parallel development of single-market and multi-branch systems over the century allows us to test our ideas, since the single-market banks remained sharply focused on a market and so could have reaped identity-based advantages. The multi-market branch systems, by contrast, were by design not wed to a single market, nor did they identify with any single market. To the contrary, their strength was thought to be their presence in multiple markets – a service and convenience quality. So we make our predictions about an identity-based first-mover advantage for the single-market banks only.

Models

Our data allow us to model differences in the growth and failure rates among California banks, because they include all banks that ever existed in the State during the period 1900-1990, no matter how small, unsuccessful, or short-lived they may have been. By using such data, we avoid the survivor and other success biases that often plague research on the first-mover advantage. For instance, some first-mover studies use data from the *Thomas Register of American Manufacturers*, which omits firms that have exclusively local sales – smaller and less successful firms by and large. Similarly, first-

mover studies using the PIMS data exclude small firms, since these data include only the Fortune 500. By contrast, we can model the effects of moving first on viability without excluding small or less successful organizations.

Organizational failure was modeled in terms of the instantaneous hazard rate of market exit:

$$r_j(t) = r_j(t)^* \exp[a_r F + b_r t_F],$$

where $r_j(t)$ is organization j's rate of market exit as a function of its duration in the market, $r_j(t)^*$ is the baseline market exit rate, F is an indicator set equal to 1 for organizations that are first to enter their market, and t_F is a time-in-market clock specified only for first-movers. If there is an advantage to single-market first-movers, as we predict, then we would expect to find $a_r<0$ for single-market banks – meaning that these firms were less likely to exit their market. And finding $b_r>0$ will imply that this advantage dissipates over time, as we expect. $r_j(t)^*$ was specified as a piecewise exponential model, allowing us to include duration effects, control variables, period effects, and market-specific fixed effects. Note that we estimate b_r in terms of the differences across a set of piecewise effects rather than as a single parameter, consistent with the approach used in the piecewise exponential model.

The growth implications of entering first are studied using the model:

$$S_{jt1} = S_{jt0}^{\alpha} \exp[a_{\Delta S} F + b_{\Delta S} t_F + cX]\varepsilon,$$

where S_j refers to organization j's size at a given time t, X is a vector of control variables (including period effects and market-specific fixed effects) and c are their effects, and F and t_F are the first-mover indicator and clock. This model of growth allows for a baseline null process of random, proportionate growth among these organizations, so-called

"Gibrat's Law" (Ijiri and Simon, 1977). This model has been used to good effect in time-series analyses of organizational growth. In the context of this model, if there is a first-mover advantage in organizational growth for single-market banks, then we would expect to find $a_{\Delta S}>0$, and if that effect dissipates with time we should find $b_{\Delta S}<0$.

An important event in the life of a single-market bank is the expansion into multiple markets. Although a form of growth, the event is discrete and so we model it in terms of a hazard rate:

$$g_j(t) = g_j(t)^*\exp[a_g Z],$$

where $g_j(t)$ is the instantaneous transition rate of expansion into multiple markets, and t is the time the organization has been at risk of such expansion. (By definition, only single-market banks are at risk of experiencing such an event.) This model will be used to see whether naming a bank after its locale constrains it from growing beyond that market. This effect of bank name, as well as the other independent variables, are included in the vector Z. The baseline hazard of expansion into multiple markets, $g_j(t)^*$, has not been the focus of research and so little is known about its functional form. Consequently, as in the failure model, we use the extremely flexible piecewise exponential specification of this model.

It is worth noting that all models include fixed effects for each local banking market. This approach allows us to separate the failure and growth advantages associated with being first from time invariant, market-specific differences. An organization might fail or grow because it is a pioneers in a market that turns out to be less or more attractive than other markets. Such market-specific effects will apply to all organizations in the

market, regardless of whether they are first movers, and so will be parameterized in the market-specific fixed effects.

Regarding the control variables to be included in the models, one must interpret the existing research with a careful eye on the way each study is designed. First, some studies point to effects that are relevant to first-movers in a context of rapid technological change – as in high technology markets (Srinivasan et al., 2004). For instance, Barnett and Freeman (2000) find that stronger competition is generated by later entrants into semiconductor markets, since these firms bring the latest technology to bear. The findings from such studies may not generalize to less technology driven industries, such as the banking markets studied here.

Second, we note that in their comprehensive reviews, Lieberman and Montgomery (1988, 1998) report mixed results in the empirical record, and a problem of survivorship bias in much of the work on the first-mover advantage. Often this work used data featuring only large organizations that have survived the start up process – sometimes not even defining an organization to be eligible for first-mover status until it has survived and grown. As observed in many reviews of this literature, it is difficult to understand whether in fact moving first is an advantage if one ignores the failure risks that are likely to be involved. In our review of the literature, we restricted our attention to studies that attempted to include firms regardless of their eventual success, and so avoided as much as possible sample selection bias. For this reason, we exclude consideration of work that analyzes clearly survivor-biased data, case studies, cross-sectional data, or data on managerial perceptions.

The remaining literature suggests that time (or experience) should be included in models of first-mover advantage. Lieberman (1989) found that later entrants in the chemical process industries suffered compared to early entrants who have a cumulative output learning advantage. While we cannot control for cumulative output, we do allow for duration in the market as well as organizational age. Agarwal et al.(2002) found that early entrants were favored early in an industry's evolution, when uncertainty rewards learning. (Their data are from the *Thomas Register of American Manufacturers*, a source that omits small firms with exclusively local sales. Consequently, their results likely suffer from some sample selection bias, although less so than some other studies in this vein.) In any case, their results suggest that calendar period effects should be included in models of first mover advantage.

Robinson and Min (2002) report that failure rates are lower among first-movers – an effect that they attribute to monopoly and lead-time advantages enjoyed by early market entrants. (But, again, this study analyzes data from the *Thomas Register of American Manufacturers*.) Similarly, Magsusson et al. (2009) find early-mover market-share advantages, although again they use data that excludes purely local firms. (Also, it may be that they used retrospective survey data, which would be survivor biased. But this is difficult to ascertain.) And in their study of European telecommunications, Usero and Fernandez (2009) find early-mover market share advantages. All in all, these various studies point to the importance of market position, so we will include an indicator for banks that have a monopoly position in their local market, as well as counts of competing organizations and branches in the local market.

Data

Our data include every retail bank that ever existed in California between 1900 and 1990. Information was collected by manually coding the life histories of every domestic California bank from the Rand McNally Banker's Directory and Thomson Bank Directory. The full history of population evolution and branching in California banking industry is well documented by the two sources. The existence of each bank was documented in each year. Also recorded were its size in assets and the localities in which it operated. For individual branches, it was also noted when a bank entered or exited a particular locality. For model estimation, the data were structured into bank-location dyads, and then these dyads were split into annual segments for the duration of time that a given bank spent in a given locality. In the event models, hazards were then estimated at the bank-locality level. The final dataset consists of 32,657 observations at the bank level, and 105,022 observations at the bank-location dyad level. Figure 1 shows the number of banks over time, according to whether they operated in only one or in multiple locations. While the overall population reflects a typical pattern of industry life-cycle with initial fast growth followed by gradual decline, increasing branching occurred over most of the 20th century.

We identified the specific geographic location of all 1,625 banking markets in California, and then identified each local banking market entry and exit, as shown in Figure 2. Each market exit was treated as a market exit event for purposes of model estimation. (Of course, for single-location banks, a market entry is an organizational founding, and an exit is an organizational failure.) Non-failure market exit events, such as mergers and acquisitions not due to failure, were treated as a competing risk. For

multi-location banks exiting simultaneously from many markets at once, such events were treated as over-sampling on a single event and weighted accordingly. Specifically, when a multi-locality bank exited multiple localities in the same year, these events were weighted by 1/k, where k is the number of simultaneous exits that occurred for that bank in that year. This approach treats simultaneous, multiple location exits by branch systems as having been oversampled, reducing their effect on the parameter estimates by the degree of oversampling (see Hoem, 1985).

The analyzable data are described in tables 1, 2, 3, 4 and 5, and include several independent variables:

Human Population. To account for heterogeneity among different locations, we collected from the bankers' directories the human population for each location as long as it had a bank. Unlike the census, which is available only decennially, this source provided fine-grained measures of the human population in every year in every location. We coded these data in 5 year panels, and then linearly interpolated to approximate the human population in each location in each year.

Number of Locations. In this research, location is defined at the individual community level, typically a town or municipality. One critical issue in localized competition is to attract as many customers as an organization's capacity permits. Such capacity is extremely constrained by where the physical unit is located in the banking industry. The number of geographic locations is both a convenient and meaningful indicator to capture how broadly a bank attempts to leverage the financial resources. We also use a binary variable to indicate whether the focal bank is a multi-location organization in our estimates.

Size. Within each banking market, the data measure each bank's size in terms of the number of branches operated by the bank in that location in each year. This measure of size is used in the growth models. As an independent variable in the market exit models, we control for organization-level size in terms of assets. The recorded assets were adjusted to the Consumer Price Index (CPI) published by the United States Bureau of Labor Statistics. We interpolate missing values between any two pints of available information. For those missing outside the range of the existing observations, we impose a match with the closest available value in the time series.

Age and calendar periods. We calculate bank age as the difference between the calendar year and the founding year of a bank. Bank age is distinct from duration in market, which is location specific and is used for purposes of constructing the risk set. Separately, calendar period effects were include in all models. Aside from controlling for unique, history-specific differences that might otherwise bias our estimates, these effects allow for failure and growth rates to differ according to the stage of industrial development over historical time.

First Mover. We define first mover as the first bank that starts an operating establishment in the history of a city. Each particular location has at most one first mover, and no other organizations will be treated as first mover even if the initial one fails. By construction, a multi-location organization could be first mover in multiple locations. It deserves mentioning that if two or more organizations show up simultaneously in the earliest history of a location, neither is treated as a first mover to avoid false positive errors. Such cases account for less than 3% of the observations.

Number of Competing Organizations. To address the local competition effect for the focal bank, we include the number of competing organizations at each location each year. This variable is distinct from the number of separate establishments operated by rivals, since each rival may operate multiple establishments in a given local market. The number of banks statewide, or "bank density," was also calculated for each year. This variable has been found to affect vital rates in many different industries (Carroll and Hannan, 2000).

Results

Tables 6a and 6b report estimates of the market exit rate models for single-market banks. Model 1 is a baseline with the various control variables, model 2 includes the first-mover indicator variable, and model 3 allows the first-mover effect to vary over time. Model 3 is a statistical improvement over the baseline model, and its estimates support hypotheses 1 and 2. Model 3 shows that first movers initially have a market exit rate about 60% lower than would otherwise have been the case, but that this advantage disappears after 5 years and continues to fall away over time.[1] (There is a slight improvement after year 30, but this is for a small-numbers tail of the distribution and so there is very little statistical power behind this estimate.) By comparison, tables 7a and 7b show the same models estimated for the multi-market bank branches. These estimates fail to show a statistically significant first-mover advantage at any time for bank branches

[1] The multiplier of the rate implied by the estimate is exp[-.8989]=.407, meaning that the exit rate of first movers is about 40% of what would have been the case had they not been first movers, or a reduction of about 60%.

with respect to the market exit rate. Overall, this pattern is entirely consistent with the arguments we put forward in this paper.

Turning to our hypothesis tests in the growth models, tables 8a and 8b report models of within-market branch proliferation for the single-location banks. Model 8 in table 8a shows no significant effect of being a first mover. But model 9, which allows the first-mover effect to be temporary as we hypothesized, does show the predicted pattern of effects to be significant. Among single-market banks, there is an initial first-mover advantage in growth rates – a multiplier of about .2%.[2] (This appears to be a small effect substantively, but recall that this is an annual multiplier that compounds over time.) This advantage then dissipates over time according to the coefficient of the first-mover duration clock, ultimately eliminating the advantage completely after about 15 years. By comparison, tables 9a and 9b report the within-market branch proliferation rate for multi-location banks. Unexpectedly, we do find a first-mover advantage for these banks, but we do not find statistically significant evidence that this effect dissipates. So single-market banks enjoy a first-mover advantage in growth rates, an effect that fades over time consistent with our arguments. By comparison, branch banks that move first remain advantaged with respect to growth. This effect may reflect a strategic difference characterizing certain branch banks that are more aggressive with respect to growth. We speculate about this unexpected effect in the discussion section.

Looking across all models, the effects of naming a bank after its locality are interesting, and support the idea that expansion is constrained by identity claims. We do

[2] The multiplier of the branch establishment rate implied by the estimate is exp[.00259]=1.00259, meaning that the annual rate of growth in numbers of branches is initially about .2% higher for first movers.

not find statistically significant naming effects in any of the exit rate models, while growth rates within a locality are higher for banks named after that locality. This identity-based benefit is clearly offset for single-location banks, which face a strong constraint if they name themselves after their location. Tables 10a and 10b show estimates of the rate of becoming a multi-location bank. These models show no first-mover effects, but they do show powerful and significant constraining effects of being named after a location. In the best-fitting model (13), single-market banks named after their locality are about 40% less likely to become multi-market banks than are single-market banks not named after their home markets.[3] So a single-market bank named after its locale is more likely to growth there, but is less likely to move beyond the context with which it identifies.

As we noted in our review of the literature, first-movers are thought to gain an advantage by building a superior position in the market. Our approach here was to control explicitly for the benefits of a superior strategic position, in order to isolate in the first-mover terms the effects of being first *per se.* Several variables were included to capture these positional effects. Having a monopoly position turned out to be a very strong advantage in terms of both survival and proliferating branches, but only for single-location banks. We found no statistically significant monopoly effects for branch systems. Single-location banks also saw higher exit rates and lower branch proliferation rates when they face more competitors. By comparison, multi-location banks' survival in a location was not significantly affected by competition, and their growth rates were

[3] The implied multiplier of the rate is exp[-.5267]=.407, meaning that the exit rate of first movers is about 60% of what would have been the case had they not been first movers, or a reduction of about 40%.

actually increased when there were more rivals. Larger rivals, however, harmed the growth rates of multi-location banks and lowered the exit rates of single-location banks – evidence of resource partitioning and size-localized competition (Carroll and Hannan, 2000). Finally, the size of the human population increased the growth rates of multi-market banks, but increased the failure rates of single-market banks. This pattern suggests that these two kinds of organizations flourished in very different market niches – single-location banks in small towns and multi-location branch systems in bigger cities.

Organizational size effects are significant across most models, and are in the direction that one would expect. Banks with greater assets survive at a higher rate, an effect that is significant for both single-market and multi-market banks in tables 6a and 7a. Banks with greater assets also proliferate branches within a given locality at a higher rate (tables 8a and 9a), and they are more likely to expand to become branch systems (table 10a). In the branch proliferation models (tables 8a and 9a), the lagged dependent variable shows that growth rates are disproportionately lower for larger banks. This violation of Gibrat's law is consistent with a large literature replicating this effect in a variety of organizational contexts. Given the fact that these models do not explicitly build in a ceiling effect to the local area growth process, this violation of Gibrat's law may simply reflect large banks reaching the carrying capacity of the local market for bank branches.

Finally, duration and stability effects in the models are interesting. Duration in location has no significant effect on exit rates. (There is a very small change across the estimates of each of the time pieces in the models, but these changes are tiny compared to the standard errors of the estimates.) With respect to growth, branch systems proliferate

within a market at a greater rate as duration there increases (table 9a) – an effect not found for single-market banks. Banks were considerably worse off if they changed their home location. Moving a bank's home office (the variable "migrant" in the tables) is a relatively rare event, but one that strongly and significantly increases the failure rates of all banks, and lowers the growth rates of single-market banks. These effects are very strong, and suggest either a disruptive effect of change or that desperate banks tend to move.

Discussion and Conclusion

Originality is valued in many contexts, and often being acknowledged as "the original" enhances one's perceived authenticity. Applying this idea to organizations in markets, we looked at whether being the first in a market *per se* enhances the viability of organizations. Given what is known about organizational identity, we theorized that such an advantage would go to organizations that remain sharply focused on their market of origin. We also noted that perceptions of originality, by their nature, become inaccurate and questionable with the passage of time – to the point where marketing campaigns are known to feature dubious claims of originality. For this reason, we also thought that the limits of market memory would attenuate an identity-based first-mover advantage with the passage of time. In our empirical investigation, we found precisely this pattern of results. Single-location banks reaped a survival and growth advantage when they were first in their market, but this advantage faded with time. By comparison, this pattern did not emerge for multi-location branching systems, which by their nature did not identify with any particular local banking market.

We also found some unexpected results worthy of discussion. In the branch proliferation models, we found that multi-location branch systems had a growth advantage if they moved first into a market, and this advantage did not fall away over time. This pattern suggests to us two possible interpretations. First, it may be that first-moving branch systems located in superior geographic spots within each community, an advantage that reaped benefits on into the future. This interpretation, however, would also predict a survival advantage for these operations, and we did not find such an advantage. This pattern suggests a second interpretation: that there was unobserved heterogeneity among branching systems, with some of these systems having a more aggressive, growth-oriented strategy. As Romanelli (1989) observed, organizations pursuing such a strategy will tend to be disproportionately represented among first movers. These organizations will move first into markets, and will continue to proliferate branches at a higher rate over time.

We understand that much about this paper hinges on accepting our interpretation of quantitative results. As is typical in such research, we systematically measure structural qualities such as organizational scope, but our theory is about a rich sociological mechanism. This will strike many readers as unusual, since ordinarily work on the first-mover advantage emphasizes more technical mechanisms (as opposed to identity-based mechanisms), such as market share, learning advantages, or switching cost advantages. It is not our purpose here to say that these more technical mechanisms are unimportant. In fact, we find strong monopoly advantages, size advantages, and even some duration advantages that could be interpreted as evidence of learning. But even with these advantages controlled, we still find evidence that being first *per se* can be an

advantage to organizations – but only to those that can make legitimate identity claims associated with a specific market. Furthermore, the qualitative record reinforces our results, emphasizing as it does the fact that local bankers relied on their local reputations and standing in the community as a source of information and to attract business. Our models showed the quantitative effect of these qualitative processes on the viability of these organizations, and the operation of first-mover advantage.

More generally, our results speak to the strategy research community, in that they show the merits of introducing sociological reasoning into processes that have, to date, been understood in purely economic terms. Originality and identity play an important role in market dynamics, and in the operation of the first-mover advantage. As our models demonstrate, where an identity advantage favors first-movers, this advantage is limited in both space and time. This fact suggests that future work on the first-mover advantage should explicitly model the dynamics of this advantage, as we do here. These results speak, too, to the way that research on this topic is designed. Much of the literature on the first-mover advantage restricts its attention to large, multi-market organizations. But such organizations, by their nature, cannot make legitimate identity claims associated with a single market. Consequently, the advantages that accrue to being "the original" have been systematically excluded from observation and consideration in much of our research on the first-mover advantage. To understand the first-mover advantage only in terms of economic market position, to the neglect of the social identities that are so important to organizations, ignores the fact that first movers are originals. Such pioneers take a great risk by virtue of their entry into a market, but if

their identity claims prove out over time, they stand also to benefit greatly in terms of status and market position.

Taking a sociological perspective, being first in a market is understood as a social fact, rather than as a deliberate move made by the player in a game. Of course, some organizations do make it their explicit strategy to deliver products and services to market ahead of their competition. This strategy is especially common among large organizations that routinely move in and out of multiple markets. For such firms, an important decision is when to enter a market, and in making that decision the possibility of first-mover advantage routinely arises (Mitchell, 1989). Product road maps, development gating processes, and strategic plans in large organizations all feature a treatment of the timing problem in market entry. So conceived, first-mover advantage seems especially relevant to organizations that engage their market positions through an explicit decision process, rather like players in a game. Yet organizations that are original to a market enjoy authenticity of a sort that the strategic moves of large multi-market firms do not. The "plays" of large multi-market organizations may enjoy first-mover advantages for other reasons, but they are unlikely to plausibly claim the identity of an original pioneer.

So the organizations we see around us often appear in markets through a much more emergent, less deliberate process. Often an entrepreneur will create an organization at a given time and place simply because that is when and where he is, rather than through a "strategic decision" as such (Selznick, 1957). Our findings suggest that such organizations sometimes identify explicitly with local markets, and in doing so constrain their ability to expand beyond that market. So the first telephone company in Iowa, the

first newspaper publisher in Helsinki, and the first retail bank in Napa all were started by entrepreneurs from those times and places. Each of these first movers built an organization from the relationships and resources each could access in those times and places – so that their new organizations likely could not have been created in some other market nor at some other time in history. We are intrigued by the fact that such first-movers are authentic pioneers – originals who embody a market in contrast to the "plays" made by large multi-market organizations that select among the times and places to stage their market entries. Such originality has important consequences for organizational identity, and so for the fates of organizations that emerge first in a market.

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Figure 1: Numbers of Single-Location and Multi-Location Banks in California

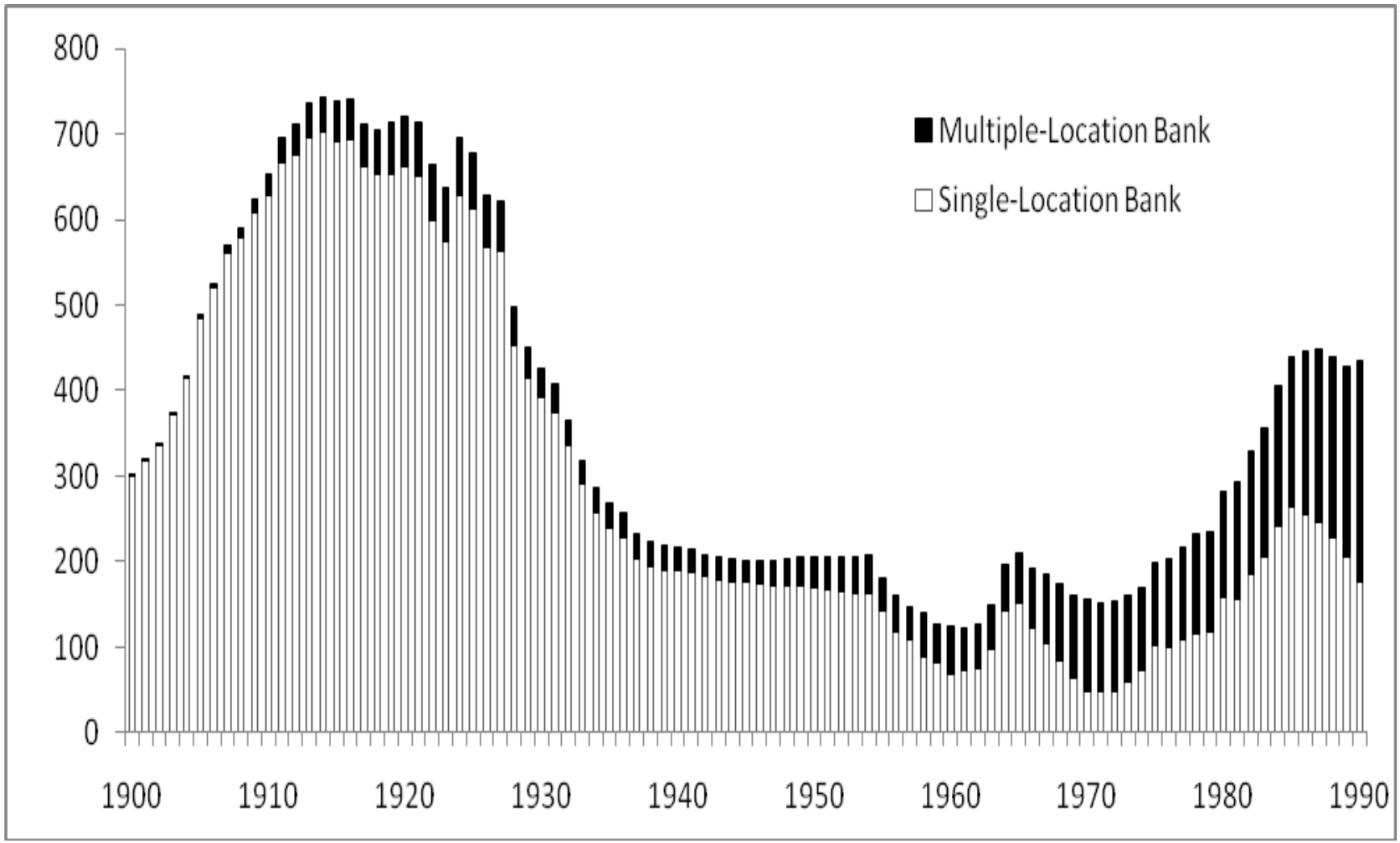

Figure 2: Number of Location Entries and Exits Among California Banks

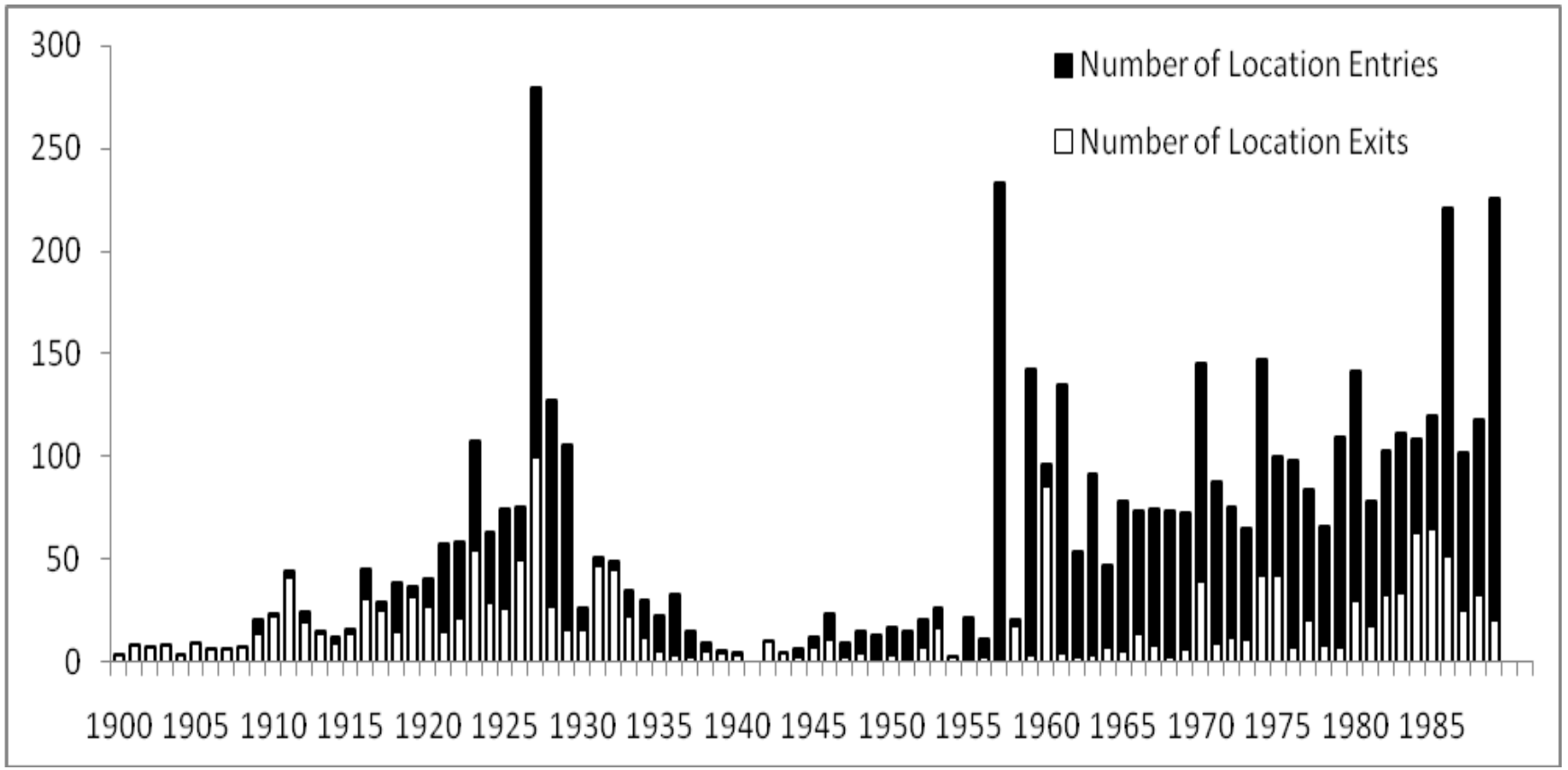

Table 1
Description of the Data used to Estimate the Market Exit Rate for Single-Market Banks in California, 1900-1990†

	Mean	Std. Dev.	Minimum	Maximum
Statewide Bank Density	491.5717	206.0933	102	742
ln(Bank's Assets)	15.7344	1.6291	5.8510	22.4621
ln(Local Market Population)	9.0959	2.2617	4.6052	15.0089
Bank's Branches in Market	1.0600	.6789	1	57
Monopoly	.2023	.4017	0	1
# of Rival Bank	6.0340	10.6022	0	76
in Local Market				
# of Rival Bank Branches	17.2378	50.6915	0	338
in Local Market				
Migrant	.0067	.0818	0	1
Bank Named After Locality	.3890	.4875	0	1
First Mover	.3292	.4699	0	1

†"Market" refers to a geographically local banking market. The data include 622 market exits among 1,897 banks across 510 markets over 26750 organization-years.

Table 2
Description of the Data Used to Estimate the Market Exit Rate for Multi-Market Banks in California, 1900-1990†

	Mean	Std. Dev.	Minimum	Maximum
Statewide Bank Density	274.0588	133.8106	102	742
ln(Bank's Assets)	21.8236	3.0863	5.8510	25.5882
Bank Age	51.0131	32.2136	0	135
# of Bank's Local Markets	191.8861	183.6608	2	513
Statewide				
ln(Local Market Population)	9.4668	2.1707	4.6052	15.0089
Bank's Branches in Market	1.6728	3.6311	1	84
Monopoly	.1760	.3808	0	1
# of Rival Bank	4.9419	8.0250	0	76
in Local Market				
# of Rival Bank Branches	13.6705	40.2318	0	338
in Local Market				
Migrant	.8916	.3109	0	1
Bank Named After Locality	.0218	.1461	0	1
First Mover	.1224	.3277	0	1

†"Market" refers to a geographically local banking market. The data include 858 market exits (324 after weighting) among 515 banks across 769 markets over 64,992 organization-years (47,904 after weighting).

Table 3
Description of the Data Used to Estimate Models of Within-Market Branch Proliferation for Single-Market Banks in California, 1900-1990†

	Mean	Std. Dev.	Minimum	Maximum
ln(Bank's Branches in Market)	.0293	.1746	0	4.0431
Statewide Bank Density	492.4895	206.7663	102	742
ln(Bank's Assets)	15.7364	1.6210	5.8510	22.4621
ln(Local Market Population)	9.0773	2.2562	4.6052	15.0089
Duration at Current Location	16.5185	16.2397	0	112
Monopoly	.2049	.4037	0	1
# of Rival Bank	5.9621	10.4792	0	74
in Local Market				
# of Rival Bank Branches	17.0486	50.5073	0	338
in Local Market				
Migrant	.0058	.0760	0	1
Bank Named After Locality	.3894	.4876	0	1
First Mover	.3321	.4710	0	1
First Mover Duration	7.3447	14.7153	0	113

†"Market" refers to a geographically local banking market. The data include 25,285 organization-year panels including 1,897 organizations in any of 502 local markets.

Table 4
Description of the Data Used to Estimate Models of Within-Market Branch Proliferation for Multi-Market Banks in California, 1900-1990†

	Mean	Std. Dev.	Minimum	Maximum
ln(Bank's Branches in Market)	.2227	.5314	0	4.4308
Statewide Bank Density	265.5452	130.5179	102	742
ln(Bank's Assets)	21.8812	3.0820	5.8510	25.5882
Bank Age	51.4331	32.0944	0	135
# of Bank's Local Markets	196.7941	184.1769	2	513
Statewide				
ln(Local Market Population)	9.4460	2.1643	4.6052	15.0089
Duration at Current Location	18.3493	17.4264	0.5	135
Monopoly	.1793	.3836	0	1
# of Rival Bank	4.7727	7.7043	0	74
in Local Market				
# of Rival Bank Branches	13.3313	39.7203	0	338
in Local Market				
Migrant	.8939	.3079	0	1
Bank Named After Locality	.0214	.1446	0	1
First Mover	.1236	.3291	0	1
First Mover Duration	2.2384	8.3554	0	123

†"Market" refers to a geographically local banking market. The data include 60,777 organization-year panels including 515 organizations across 769 markets.

Table 5
Description of the Data used to Estimate the Hazard Rate of Becoming a Multi-location Bank for Single-Market Banks in California, 1900-1990†

	Mean	Std. Dev.	Minimum	Maximum
Statewide Bank Density	493.2263	205.7102	102	742
ln(Bank's Assets)	15.7215	1.6226	5.8510	22.4621
ln(Local Market Population)	9.0841	2.2604	4.6052	15.0089
Bank's Branches in Market	1.0541	.6569	1	57
Monopoly	.2029	.4022	0	1
# of Rival Bank	6.0490	1.6507	0	76
in Local Market				
# of Rival Bank Branches	17.2314	5.7957	0	338
in Local Market				
Migrant	.0068	.0822	0	1
Bank Named After Locality	.3867	.4870	0	1
First Mover	.3292	.4699	0	1

†"Market" refers to a geographically local banking market. The data include 427 transitions from single to multiple locations among 1,897 banks across 510 markets over 26,470 organization-years.

Table 6a
Market Exit Rate Models for Single-Market Banks in California, 1900-1990†

	Model 1	Model 2	Model 3
0 ≤ Tenure < 5	-6.4361**	-6.5072**	-6.3083**
	(1.3645)	(1.3662)	(1.3799)
5 ≤ Tenure < 15	-5.8047**	-5.8860**	-5.8358**
	(1.3583)	(1.3609)	(1.3744)
15 ≤ Tenure < 30	-5.5854**	-5.6860**	-5.6841**
	(1.3598)	(1.3644)	(1.3789)
30 ≤ Tenure	-5.7182**	-5.8482**	-5.7827**
	(1.3707)	(1.3792)	(1.3914)
Statewide Bank Density	.0043**	.0043**	.0043**
	(.0006)	(.0006)	(.0006)
ln(Bank's Assets)	-.2951**	-.2950**	-.2959**
	(.0296)	(.0296)	(.0297)
ln(Local Market Population)	.3299**	.3342**	.3250**
	(.1119)	(.1119)	(.1134)
Bank's Branches in Market	-.1385	-.1405	-.1371
	(.1869)	(.1870)	(.1873)
Monopoly	-.9948**	-1.0243**	-.8968**
	(.2390)	(.2419)	(.2467)
# of Rival Banks	.0509**	.0512**	.0504**
in Local Market	(.0111)	(.0112)	(.0112)
# of Rival Bank Branches	-.0088**	-.0090**	-.0088**
in Local Market	(.0016)	(.0016)	(.0016)
Migrant	1.6842**	1.6883**	1.7070**
	(.3321)	(.3313)	(.3296)
Bank Named after Locality	.1949	.1857	.1928
	(.1056)	(.1064)	(.1066)
First Mover		.1131	
		(.1407)	
[0 ≤ Tenure < 5]*First Mover			-.8989**
			(.3459)
[5 ≤ Tenure < 15]*First Mover			.1014
			(.2116)
[15 ≤ Tenure < 30]*First Mover			.3366
			(.1975)
[30 ≤ Tenure]*First Mover			.1460
			(.2500)
Log Likelihood	-1042.656	-1042.334	-1035.769

*p<.10, **p<.05 †"Market" refers to a geographically local banking market. The data include 622 market exits among 1,897 banks across 510 markets over 26,750 organization-years. Note that each model also includes calendar period effects, which are reported in Table 6b, and is estimated with market-specific fixed effects.

Table 6b
Calendar Period Effects Associated with the Models in Table 6a

	Model 1	**Model 2**	**Model 3**
1910 - 1920	.1881	.2020	.2089
	(.1994)	(.2004)	(.2006)
1920 - 1930	.5168**	.5448**	.5282**
	(.1966)	(.1998)	(.2007)
1930 - 1940	2.4902**	2.5300**	2.5314**
	(.2137)	(.2192)	(.2205)
1940 - 1950	1.2139**	1.2688**	1.2989**
	(.4167)	(.4221)	(.4232)
1950 - 1960	2.4269**	2.4865**	2.5012**
	(.3598)	(.3670)	(.3684)
1960 - 1970	2.1956**	2.2420**	2.2133**
	(.3931)	(.3971)	(.3989)
1970 -1980	1.4809**	1.5224**	1.4877**
	(.4555)	(.4581)	(.4602)
1980 - 1990	-.4421	-.4020	-.4468
	(.4492)	(.4515)	(.4526)

*p<.10, **p<.05

Table 7a. Market Exit Rate Models for Multi-Market Banks in California, 1900-1990†

	Model 4	**Model 5**	**Model 6**
0 ≤ Tenure < 5	-3.5617	-3.6777	-3.7233
	(2.0787)	(2.0774)	(2.0900)
5 ≤ Tenure < 15	-2.8810	-3.0098	-3.1995
	(2.0756)	(2.0746)	(2.0888)
15 ≤ Tenure < 30	-3.0337	-3.1835	-3.3419
	(2.0780)	(2.0779)	(2.0935)
30 ≤ Tenure	-2.7982	-2.9870	-3.2141
	(2.0946)	(2.0966)	(2.1147)
Statewide Bank Density	.0013	.0012	.0012
	(.0011)	(.0011)	(.0011)
ln(Bank's Assets)	-.0967**	-.0930**	-.0940**
	(.0283)	(.0286)	(.0287)
Bank Age	.0039	.0039	.0039
	(.0025)	(.0025)	(.0025)
# of Bank's Local Markets	-.0081**	-.0081**	-.0081**
Statewide	(.0010)	(.0010)	(.0010)
ln(Local Market Population)	.1038	.1036	.1247
	(.1529)	(.1522)	(.1536)
Bank's Branches in Market	-.2462*	-.2463*	-.2355*
	(.1203)	(.1206)	(.1201)
Monopoly	-.2535	-.3124	-.2760
	(.2808)	(.2837)	(.2870)
# of Rival Banks	-.0173	-.0171	-.0174
in Local Market	(.0181)	(.0180)	(.0180)
# of Rival Bank Branches	-.0013	-.0021	-.0018
in Local Market	(.0054)	(.0054)	(.0054)
Migrant	.4871*	.4911*	.4881*
	(.2205)	(.2215)	(.2225)
Bank Named after Locality	-.3109	-.4098	-.4554
	(.4091)	(.4202)	(.4238)
First Mover		.3753	
		(.2876)	
[0 ≤ Tenure < 5]*First Mover			-.1826
			(.4031)
[5 ≤ Tenure < 15]*First Mover			.5994
			(.3502)
[15 ≤ Tenure < 30]*First Mover			.5153
			(.4970)
[30 ≤ Tenure]*First Mover			.7108
			(.5866)
Log Likelihood	-765.516	-764.675	-762.193

*p<.10, **p<.05 †The data include 858 market exits (324 after weighting) among 515 banks across 769 markets over 64,992 organization-years (47,904 after weighting). Note that each model also includes calendar period effects, which are reported in Table 7b, and is estimated with market-specific fixed effects.

Table 7b
Calendar Period Effects Associated with the Models in Table 7a

	Model 4	**Model 5**	**Model 6**
1910<year≤1920	-.6436	-.5728	-.5726
	(.7498)	(.7549)	(.7646)
1920<year≤1930	.3181	.4336	.3676
	(.7275)	(.7359)	(.7501)
1930<year≤1940	-.0021	.1536	.0541
	(.8192)	(.8311)	(.8450)
1940<year≤1950	-.8796	-.7331	-.7774
	(.9117)	(.9226)	(.9340)
1950<year≤1960	-.3828	-.2307	-.3129
	(.9038)	(.9147)	(.9265)
1960<year≤1970	-.7457	-.5827	-.6801
	(.8901)	(.9025)	(.9150)
1970<year≤1980	-.7512	-.5764	-.6772
	(.8789)	(.8930)	(.9055)
1980<year≤1990	-.8657	-.6573	-.7693
	(.8066)	(.8261)	(.8402)

*p<.10, **p<.05

Table 8a
Models of Within-Market Branch Proliferation for Single-Market Banks in California, 1900-1990†

DV = ln(Bank's Branches in Market $_{t+1}$)	**Model 7**	**Model 8**	**Model 9**
ln(Bank's Branches in Market)	.9716**	.9715**	.9710**
	(.0083)	(.0083)	(.0083)
Statewide Bank Density	-3.900×10^{-6}	-3.930×10^{-6}	-3.920×10^{-6}
	(7.0700×10^{-6})	(7.0800×10^{-6})	(6.9900×10^{-6})
ln(Bank's Assets)	1.5826×10^{-3}**	1.5837×10^{-3}**	1.5522×10^{-3}**
	(5.9385×10^{-4})	(5.9378×10^{-4})	(5.8503×10^{-4})
ln(Local Market Population)	1.9048×10^{-3}	1.8249×10^{-3}	1.8792×10^{-3}
	(1.2581×10^{-3})	(1.2681×10^{-3})	(1.2616×10^{-3})
Duration at Current Location	1.2360×10^{-5}	3.1210×10^{-5}	8.3550×10^{-5}
	(7.0530×10^{-5})	(8.2410×10^{-5})	(9.5010×10^{-5})
Monopoly	2.6065×10^{-3}	3.2892×10^{-3}*	1.9340×10^{-3}
	(1.4030×10^{-3})	(1.5827×10^{-3})	(1.3528×10^{-3})
# of Rival Banks	-4.7691×10^{-4}**	-4.8071×10^{-4}**	-4.5847×10^{-4}**
in Local Market	(1.1298×10^{-4})	(1.1482×10^{-4})	(1.0493×10^{-4})
# of Rival Bank Branches	2.0480×10^{-5}	2.3290×10^{-5}	1.8880×10^{-5}
in Local Market	(2.6740×10^{-5})	(2.8150×10^{-5})	(2.6480×10^{-5})
Migrant	-.0149*	-.0149*	-.0150*
	(.0068)	(.0068)	(.0068)
Bank Named after Locality	3.9297×10^{-3}*	4.0485×10^{-3}*	4.1768×10^{-3}*
	(1.7482×10^{-3})	(1.7265×10^{-3})	(1.6920×10^{-3})
First Mover		-1.6156×10^{-3}	2.5934×10^{-3}*
		(1.5544×10^{-3})	(1.3079×10^{-3})
First Mover Duration			-1.6756×10^{-4}*
			(7.7700×10^{-5})
Constant	-.0392**	-.0382**	-.0394**
	(.0136)	(.0132)	(.0132)
R^2 (Within)	.8590	.8590	.8591

*p<.10, **p<.05

†"Market" refers to a geographically local banking market. The data include 25,285 organization-year panels including 1,897 organizations in any of 502 local markets. Note that each model also includes calendar period effects, which are reported in Table 8b, and is estimated with market-specific fixed effects.

Table 8b
Calendar Period Effects Associated with the Models in Table 8a

	Model 7	**Model 8**	**Model 9**
(1910<year≤1920)	3.0301×10^{-3}	2.8422×10^{-3}	2.9951×10^{-3}
	(1.6787×10^{-3})	(1.7640×10^{-3})	(1.6992×10^{-3})
(1920<year≤1930)	5.5099×10^{-3}*	5.1616×10^{-3}*	5.5835×10^{-3}*
	(2.4047×10^{-3})	(2.4419×10^{-3})	(2.4113×10^{-3})
(1930<year≤1940)	-2.1708×10^{-3}	-2.7066×10^{-3}	-2.1500×10^{-3}
	(1.9114×10^{-3})	(2.0420×10^{-3})	(2.0293×10^{-3})
(1940<year≤1950)	-2.9696×10^{-3}	-3.6574×10^{-3}	-3.0301×10^{-3}
	(2.3566×10^{-3})	(2.6560×10^{-3})	(2.5310×10^{-3})
(1950<year≤1960)	-4.1246×10^{-4}	-1.1441×10^{-3}	-4.9107×10^{-4}
	(3.1723×10^{-3})	(3.4410×10^{-3})	(3.3502×10^{-3})
(1960<year≤1970)	3.9324×10^{-3}	3.3853×10^{-3}	4.3623×10^{-3}
	(3.9664×10^{-3})	(3.9625×10^{-3})	(4.1507×10^{-3})
(1970<year≤1980)	.0118	.0113	.0124
	(.0071)	(.0070)	(.0073)
(1980<year≤1990)	.0259**	.0255**	.0264**
	(.0056)	(.0056)	(.0057)

*p<.10, **p<.05

Table 9a
Models of Within-Market Branch Proliferation for Multi-Market Banks in California, 1900-1990†

DV = ln(Bank's Branches in Market $_{t+1}$)	**Model 10**	**Model 11**	**Model 12**
ln(Bank's Branches in Market)	.9651**	.9650**	.9650**
	(.0022)	(.0022)	(.0022)
Statewide Bank Density	-7.3270×10^{-5}**	-7.3590×10^{-5}**	-7.3570×10^{-5}**
	(1.2240×10^{-5})	(1.2260×10^{-5})	(1.2240×10^{-5})
ln(Bank's Assets)	1.0701×10^{-3}*	1.1161×10^{-3}*	1.1200×10^{-3}*
	(4.6595×10^{-4})	(4.7070×10^{-4})	(4.6921×10^{-4})
Bank Age	6.0700×10^{-6}	4.0100×10^{-6}	4.9000×10^{-6}
	(1.8140×10^{-5})	(1.8200×10^{-5})	(1.8330×10^{-5})
# of Bank's Local Markets	7.6000×10^{-6}	7.3500×10^{-6}	6.8000×10^{-6}
Statewide	(6.0500×10^{-6})	(6.0500×10^{-6})	(6.0100×10^{-6})
Local Population (Log)	.0108**	.0107**	.0106**
	(.0017)	(.0017)	(.0017)
Duration at Current Location	1.8253×10^{-4}**	1.6967×10^{-4}**	1.8051×10^{-4}**
	(5.7690×10^{-5})	(5.8220×10^{-5})	(6.0170×10^{-5})
Monopoly	7.0173×10^{-4}	-1.8409×10^{-4}	-4.8366×10^{-4}
	(1.8064×10^{-3})	(1.7573×10^{-3})	(1.7635×10^{-3})
# of Rival Banks	1.4451×10^{-3}**	1.4553×10^{-3}**	1.4588×10^{-3}**
in Local Market	(3.2295×10^{-4})	(3.1780×10^{-4})	(3.1583×10^{-4})
# of Rival Bank Branches	-9.6408×10^{-4}**	-9.7538×10^{-4}**	-9.7632×10^{-4}**
in Local Market	(2.6417×10^{-4})	(2.6313×10^{-4})	(2.6264×10^{-4})
Migrant	-5.5105×10^{-3}	-5.5317×10^{-3}	-5.5854×10^{-3}
	(3.2954×10^{-3})	(3.2931×10^{-3})	(3.2969×10^{-3})
Bank Named after Locality	.0180*	.0172*	.0176*
	(.0080)	(.0080)	(.0081)
First Mover		5.4216×10^{-3}**	7.4231×10^{-3}**
		(1.8753×10^{-3})	(2.3381×10^{-3})
First Mover Duration			-1.0016×10^{-4}
			(1.0066×10^{-4})
Constant	-.0726**	-.0758**	-.0764**
	(.0181)	(.0181)	(.0179)
R^2 (Within)	.9430	.9431	.9431

*p<.10, **p<.05

†"Market" refers to a geographically local banking market. The data include 60,777 organization-year panels including 515 organizations across 769 markets. Note that each model also includes calendar period effects, which are reported in Table 9b, and is estimated with market-specific fixed effects.

Table 9b
Calendar Period Effects Associated with the Models in Table 9a

	Model 10	**Model 11**	**Model 12**
(1910<year≤1920)	.0207**	.0216**	.0222**
	(.0052)	(.0051)	(.0050)
(1920<year≤1930)	.0106	.0123	.0133
	(.0166)	(.0166)	(.0164)
(1930<year≤1940)	-.0160*	-.0134	-.0122
	(.0076)	(.0076)	(.0073)
(1940<year≤1950)	-.0172	-.0143	-.0132
	(.0092)	(.0092)	(.0090)
(1950<year≤1960)	-.0143	-.0113	-.0102
	(.0088)	(.0088)	(.0085)
(1960<year≤1970)	-.0135	-.0105	-.0093
	(.0095)	(.0096)	(.0094)
(1970<year≤1980)	-.0166	-.0134	-.0122
	(.0101)	(.0102)	(.0099)
(1980<year≤1990)	-.0138	-.0102	-.0090
	(.0101)	(.0103)	(.0101)

*p<.10, **p<.05

Table 10a
Models of Becoming a Multi-location Bank for Single-Market Banks in California, 1900-1990†

	Model 13	**Model 14**	**Model 15**
0 ≤ Tenure < 5	-10.2267**	-10.4184**	-10.3970**
	(1.7789)	(1.7937)	(1.7986)
5 ≤ Tenure < 15	-10.2179**	-10.4134**	-10.2987**
	(1.7775)	(1.7928)	(1.7982)
15 ≤ Tenure < 30	-10.4965**	-10.7191**	-10.8486**
	(1.7812)	(1.8009)	(1.8102)
30 ≤ Tenure	-10.6371**	-10.8945**	-10.8625**
	(1.7934)	(1.8204)	(1.8211)
Statewide Bank Density	2.6011×10^{-3}**	2.6152×10^{-3}**	2.5848×10^{-3}**
	(9.9473×10^{-4})	(9.9531×10^{-4})	(9.9864×10^{-4})
ln(Bank's Assets)	.1388**	.1382**	.1398**
	(.0373)	(.0373)	(.0373)
ln(Local Market Population)	.0789	.0930	.0865
	(.1373)	(.1382)	(.1388)
Bank's Branches in Market	.0855**	.0859**	.0862**
	(.0172)	(.0172)	(.0173)
Monopoly	-.0293	-.1420	-.1069
	(.3194)	(.3470)	(.3685)
# of Rival Banks	-6.2829×10^{-3}	-5.9471×10^{-3}	-6.5797×10^{-3}
in Local Market	(.0103)	(.0103)	(.0103)
# of Rival Bank Branches	-3.9712×10^{-3}	-4.2620×10^{-3}*	-4.2096×10^{-3}*
in Local Market	(2.0775×10^{-3})	(2.1086×10^{-3})	(2.1108×10^{-3})
Migrant	-.8561	-.8493	-.8887
	(.6259)	(.6253)	(.6300)
Bank Named after Locality	-.5267**	-.5353**	-.5332**
	(.1417)	(.1422)	(.1425)
First Mover		.2297	
		(.2747)	
[0 ≤ Tenure < 5]*First Mover			.4966
			(.5074)
[5 ≤ Tenure < 15]*First Mover			-.4601
			(.4702)
[15 ≤ Tenure < 30]*First Mover			.6309
			(.4024)
[30 ≤ Tenure]*First Mover			.2088
			(.4096)
Log Likelihood	-874.504	-874.159	-871.068

*p<.10, **p<.05 †"Market" refers to a geographically local banking market. The data include 427 transitions from single to multiple locations among 1,897 banks across 510 markets over 26,470 organization-years. Note that each model also includes calendar period effects, which are reported in Table 10b, and is estimated with market-specific fixed effects.

Table 10b
Calendar Period Effects Associated with the Models in Table 10a

	Model 13	**Model 14**	**Model 15**
1910 - 1920	.1661	.1875	.2585
	(.3740)	(.3761)	(.3770)
1920 - 1930	.4297	.4694	.4909
	(.3591)	(.3634)	(.3660)
1930 - 1940	.9833*	1.0430*	1.0622*
	(.4808)	(.4861)	(.4897)
1940 - 1950	1.8459**	1.9151**	1.9521**
	(.5076)	(.5144)	(.5192)
1950 - 1960	3.1196**	3.1914**	3.2251**
	(.4777)	(.4854)	(.4903)
1960 - 1970	4.5613**	4.6221**	4.6553**
	(.4770)	(.4825)	(.4887)
1970 -1980	4.3084**	4.3658**	4.3930**
	(.4846)	(.4894)	(.4954)
1980 - 1990	3.8544**	3.9036**	3.9307**
	(.4319)	(.4362)	(.4410)

*p<.10, **p<.05