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Resource Partitioning and the Organizational Dynamics of “Fringe Banking”

Giacomo Negro, a Fabiana Visentin, b and Anand Swaminathan a

Abstract
We examine the emergence and proliferation of payday lenders, fringe businesses that provide small short-term, but high-cost loans. We link the organizational dynamics of these businesses to two trends in consumer lending in the United States: the continuing consolidation of mainstream financial institutions; and the expansion of such institutions in the provision of financial services regarded as similar to payday loans. We explain the coexistence in mature industries of large-scale organizations in the market center and smaller specialists in the periphery by testing and extending the organizational model of resource partitioning. Our focus is on two under-examined aspects of the model: the dynamic underlying the partitioning process, and the conditions under which the market remains partitioned. The empirical analysis covers payday lenders, banks, and credit unions operating in Wisconsin between 1994 and 2008.

Keywords
sociology of markets, organization theory, resource partitioning, consumer credit, payday lending

The U.S. market for consumer credit features two seemingly contradictory trends. On the one hand, in the past three decades the banking sector has experienced a decline in the number of active firms and a growing concentration of assets and deposits among fewer, larger institutions (Jones and Critchfield 2005). With consolidation, banks have expanded into a broader mix of financial services (Berger, Demsetz, and Strahm 1999). Among other financial institutions, credit unions show similar tendencies toward concentration and diversification, although they remain smaller than banks (Emmons and Schmid 2000).

On the other hand, local businesses labeled “fringe banks” proliferated in the 1990s, specializing in unsecured loans and payment services of small amounts (Caskey 1994, 2002). A recent report suggests that borrowers spend approximately $7.4 billion annually

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in interest payments at the more than 20,000 payday loan stores across the country, the most common form of fringe lenders (Pew Charitable Trusts 2012). Payday lenders’ practices are subject to controversy. Critics emphasize that payday loans are extremely costly (with annual percentage rates above 200 percent) and aggravate financial hardship, leading to “debt traps” and distress (Melzer 2011; Peterson 2004; but, see Karlan and Zinman 2010).

The simultaneous rise of specialists, such as payday lenders, supplying a narrow range of services in a market’s periphery, and the consolidation among generalists and larger organizations, such as banks and credit unions, supplying multiple services in the center, is characteristic of the organizational model of resource partitioning (Carroll 1985).

Partitioning processes operate in markets as diverse as newspapers, auditing, breweries, automobiles, law firms, wineries, and local banks (for a review, see Carroll, Dobrev, and Swaminathan 2002). Resource partitioning is found in situations where market, spiritual, or issue space becomes fragmented, and different organizational subpopulations—whether they are business, religious, or social movement organizations—occupy distinct niches.

How does resource partitioning operate in the consumer credit market? To answer this question, we extend the original model in two ways. First, we follow a recent revision and propose that the mechanism underlying the dynamic of partitioning involves a third market position—the near-center—in addition to the center and the periphery (Hannan, Pólos, and Carroll 2007). Credit unions represent the near-center, located between banks in the center and payday lenders in the periphery, and play a critical role in the supply of consumer credit.

Second, we condition the process of partitioning on the type of periphery. We propose that reputational risk might keep generalist organizations away from low-end markets, such as payday lending, but generalists encroaching on the periphery might result in broader social acceptance of that segment.

Statistical analyses show that entry and exit rates of payday lenders in the state of Wisconsin from 1994 to 2008 are significantly linked to industry concentration among banks and credit unions. We also discover a relation between these vital rates and the value of overdraft credit supplied by banks and credit unions, services similar to but not labeled as payday loans.

One contribution of this study is to test and extend a prominent theory in the sociology of organizations that explains the structural sources of organizational diversity, particularly in markets (Fligstein 1996). The dynamics of an industry such as payday lending—in which customers disproportionately come from lower socioeconomic strata, are racial minorities, and have impaired credit histories—is relevant not only to the sociology of markets but also to research on inequality, stratification, and institutions (Keister 2002). In particular, our study suggests that the provision of financial services, in this case consumer credit, emerges as an organizational site central to the production and allocation of inequality. The seemingly predatory function of payday lending questions the assumption that greater organizational diversity reduces social disparities. In fact, the expansion of expensive loans to groups typically excluded from access to credit can exacerbate such disparities (Farber 2013). Finally, the question of how businesses like payday lenders thrive raises important issues for policy debates on lending, banking, and money.

**THEORY**

*Resource Partitioning in Markets*

In the model of resource partitioning proposed by Carroll (1985), the space of critical resources, particularly customers, employees, and technology, defines the market niche for an organization. Generalists are organizations that depend on a broader niche where resources are more varied and abundant, whereas specialists occupy a narrower niche. In the original study of newspaper publishing,
general interest newspapers were the generalists and smaller neighborhood or professional newspapers the specialists.

The resource partitioning model is based on three specific assumptions illustrated here using the newspaper industry. First, the largest share of consumer needs for a certain kind of product or service is located in the center of the market (Boone, Carroll, and van Witteloostuijn 2002). In newspaper publishing, the most abundant group of readers is middle-aged, possess some college education, and hold moderate political views. Second, significant scale advantages exist in the market center. These advantages can arise from any activity, from research and development to production to distribution. In newspapers, the marginal cost declines sharply for additional copies. Third, organizational capabilities and cultural factors act as constraints on ever-increasing growth (Carroll and Swaminathan 2000). For newspapers, it is not feasible to sustain all the competencies and information required to appeal to every single reader group.

The resource partitioning model proposes that, because organizations in the center compete on scale, their viability decreases with their distance from the peak of resources and, by implication, with increasing distance from larger competitors. Smaller generalists exit the market, but the surviving generalists do not expand sufficiently to cover the entire market space abandoned by those that exit. This creates opportunities for specialist organizations to enter and thrive on the periphery. At this point, generalist and specialist organizations can coexist because the market becomes segregated (their niches do not overlap and they do not compete for the same resources).

With greater average scale of organizations in the center of the market, smaller specialist organizations outside the center experience enhanced life chances. The typical test of the resource partitioning model involves measuring average scale of organizations in the market center with industry concentration and relating concentration to the vital rates of organizations in the market periphery. Carroll (1985) finds that the higher the concentration in advertising and circulation among generalist newspapers, the lower the mortality of specialist newspapers. His study and the ones that followed on this topic leave open two key questions: What mechanisms link proliferation in the periphery to consolidation in the market center? And, how is partitioning of the periphery maintained?

The Mechanism Underlying Proliferation in the Periphery: Competitive Release

To address the first question, Hannan and colleagues (2007) use the mechanism of competitive release, which occurs when certain kinds of organizations are able to grow freely in their niche after the removal or decline of their competitors. They distinguish three positions in a market: center, occupied by organizations offering products and services appealing to consumers with preferences in the market center; near-center, occupied by organizations appealing to preferences part inside and part outside the center; and periphery, occupied by organizations appealing to preferences outside the market center.

This revision of the model of resource partitioning suggests distinct predictions for organizations in the three market segments. Because of the benefits of scale to survival, organizations in the center aim to capture ever larger portions of the market, but organizations more distant from the larger competitors will experience lower vital rates. A first proposition is (1) organizations of smaller scale in the market center exhibit lower viability.

Fewer and larger organizations occupy the center, in other words, the market consolidates. The average near-center organization vying, at least in part, for the same market faces strong competitive pressure from the larger, surviving organizations in the center. Hence, with increasing average scale in the center, failure rates in the near-center will increase and entry rates will decrease. A similar link develops between the near-center and the periphery, with increasing average scale in the near-center reducing the viability of
organizations in the periphery. The growth of larger-scale organizations in the market center, however, will favor organizations in the periphery indirectly through a process of competitive release—the viability of near-center organizations is reduced, thus freeing up opportunities in the periphery. Consolidation in the market center and near-center is represented by industry concentration within the two locations.

Hannan and colleagues’ (2007) formal model of resource partitioning thus suggests three additional propositions: (2) due to overlap in the niche between organizations in the center and the near-center, the viability of organizations in the near-center declines with higher market concentration in the center; (3) due to overlap between organizations in the near-center and the periphery, the viability of organizations in the periphery declines with higher market concentration in the near-center; and (4) the viability of organizations in the periphery is enhanced with greater concentration in the center. Our study focuses on the organizational dynamics of the market periphery, and our analyses center on Propositions 3 and 4. We report tests of the supporting Propositions 1 and 2 in the online supplement (http://asr.sagepub.com/supplemental).

The Persistence of Resource Partitioning: Limited Encroachment on the Periphery

Previous research rarely examines the processes that maintain or erode partitioning in a market (Dobrev 2000; Pólos, Hannan, and Carroll 2010). Carroll and Swaminathan (2000) argue that the periphery gains recognition in opposition, or at least as an alternative, to the center when members of the audience mobilize against mainstream products and organizations. Debates about their cultural authenticity impede mainstream organizations from expanding into or encroaching on the periphery and preserve the boundaries between market segments. This is especially the case in what we call high-end peripheries, such as specialty breweries and boutique wineries, where market boundaries reflect social and symbolic divisions in the audience.

In other, less studied cases of the low-end periphery—including the high-cost loans we analyze, as well as markets for chiropractic medicine, pornographic publishing, and for-profit online education—the separation between market segments arises from reputational considerations. The low-end periphery offers opportunities for business growth, but the products and services are associated with questionable identities or lower quality. Specialists in this segment are protected by the fact that mainstream organizations, to limit the risks of negative associations with the low-end, can make only indirect attempts at engaging customers here. Collective mobilization carries less weight. Instead, the reputation cost linked to participation in the low-end periphery constrains the expansion of center and near-center organizations into this segment.

We expect the indirect encroachment of mainstream organizations on the periphery to enhance the viability of specialists. Several theories in organizational sociology stress the importance of legitimacy processes. Institutional theory maintains that new practices, groups, or structures become broadly accepted when market audiences view them as appropriate and conforming to recognized templates (Suchman 1995). Such validation has socio-political as well as cultural dimensions. In a similar vein, ecological theory argues that new forms of organizations and products emerge by borrowing social acceptance from established forms and products with which they share a space of material and symbolic resources (Ruef 2000).

Organizations in the market center and near-center have legitimacy that accompanies them when they move into the low-end periphery. Organizations in the low-end periphery, having limited social acceptance, will benefit from the legitimacy transferred by mainstream organizations offering related products and services. At the individual level, less recognized entities are compared and assimilated into accepted social systems and categories if their features or traits overlap.
(Mussweiler 2003). The organization-based mechanism we envision aggregates such assessments of similarity at the collective level. By this argument, innovations of specialists in the low-end periphery diffuse, in part, due to the acceptance of mainstream organizations’ indirect attempts to engage audiences in the periphery.

The legitimacy transfer plausibly increases with the success of encroachment strategies. Legitimacy supports organizational processes generally, from mobilizing financial resources to attracting and retaining employees and customers (Carroll and Hannan 2000; Johnson, Dowd, and Ridgeway 2006). Our extension of the resource partitioning model proposes that (5) in partitioning markets, the greater the encroachment in the low-end periphery by organizations in and near the center, the higher the viability of organizations in the periphery.

**RESOURCE PARTITIONING AND PAYDAY LENDING**

We now discuss the empirical setting of our analyses. In the U.S. consumer lending market for short-term small loans, households use loans primarily to finance the purchase of durable goods and services. We locate banks in the center, credit unions near the center, and payday lenders in the low-end periphery of this market.

**Banking institutions.** Since the mid-1980s, the number of banking institutions has declined by over 40 percent while industry assets have grown by nearly 70 percent in real terms (Berger et al. 2004; Jones and Critchfield 2005). The main drivers of this consolidation include deregulation, advances in technology, and the globalization of markets for financial services.

In banking, larger scale is linked to several advantages: greater risk diversification through a better mix of geographic areas, industries, customers, loan types, and maturity structures (Berger et al. 1999; Prager and Hannan 1998); organizational economies of scale from branch systems; and lower risks associated with managing accounts with higher deposit amounts (Barnett 2008). As described earlier, the resource partitioning model holds that competition in the market center is based on relative scale, and organizations of smaller size suffer a competitive disadvantage.

**Hypothesis 1:** Banks facing larger competitors have lower viability.

The online supplement reports an empirical test of Hypothesis 1. Because of the limited number of bank exits in our research site, we model bank growth rates.

**Credit unions.** Like banks, in the past few decades U.S. credit unions have experienced increased consolidation. Between 1985 and 2006, the average, inflation-adjusted assets of U.S. credit unions increased by over 600 percent. The total number of credit unions has declined sharply, from a peak of 23,866 in 1969 to just 8,662 in 2006. Despite a tripling in the median asset size of the largest 20 credit unions, the average banking institution remains over 14 times larger than the average credit union (Wheelock and Wilson 2011).

Credit unions serve members, not customers. Membership is restricted to a common bond based on occupation, association, neighborhood, community, or rural district (Moody and Fite 1971). The Federal Credit Union Act of 1934 limited the range of services that credit unions could offer, mostly low-interest loans and savings accounts; traditionally, credit unions took a conservative approach to lending. Since the late 1970s, liberalization favored credit unions’ entry into the market for checking accounts, savings accounts, certificates of deposits, investment instruments, personal loans, credit cards, vehicle loans, mortgages, home equity credit, and business loans.

Credit unions currently offer their members many of the financial services supplied by banks (Barron, West, and Hannan 1998). Like banks, credit unions operate under increasing returns to scale, with the competitive environment favoring larger credit unions.
Negro et al. (Wheelock and Wilson 2011). Emmons and Schmid (2000) and Feinberg (2001) provide evidence that banks and credit unions can compete directly (e.g., on certain loan rates).

Credit unions, however, have significant constraints on growth and remain weaker competitors against banks. Some constraints are structural, including their raison d’être as cooperative thrift organizations and limits on membership imposed by the common bond (even large credit unions locate where most members reside). Other constraints are strategic. For example, salaried professionals who presumably have a greater incentive to pursue growth (Berger et al. 1999) are uncommon in the managerial ranks of credit unions.

The resource partitioning model implies that increased consolidation in the market center results in lowered viability of organizations in the near-center that face greater constraints in exploiting scale advantages. As banks grow larger, the intense competition they generate will weaken credit unions.

Hypothesis 2: With greater concentration among banks, the market viability of credit unions will decrease.

We provide a test of Hypothesis 2 in the online supplement. Because of the very few entries of credit unions during the study period, the analysis focuses on credit union exit rates.

Payday lenders. Following two decades of deregulation, local consumer credit markets in the United States have experienced a dramatic growth in the number of non-bank lenders offering short-term, high-interest loans to borrowers with credit constraints. Caskey (1994) coined the label “fringe banking” to describe the market for these alternative financial services. This market segment is less studied than banks and credit unions, so we provide more details.

Payday lenders are key players in the fringe banking sector in Wisconsin and the rest of the United States. Payday loans are small, single-payment, unsecured consumer loans. The borrower writes to the lender a personal check of the amount equal to the loan plus a finance charge. The lender extends a loan on one date, in return for a promise to repay the amount of the loan plus a standard, usually fixed, fee (Caskey 1994).

Payday lenders make loans through storefront shops. Entry requires a modest amount of financial capital and a license from the local state regulator. The average store is small, with annual revenues of roughly $350,000. A store’s loan volume is a significant factor driving profitability—a new outlet typically makes fewer than 1,000 loans per year, and over time the number of loans increases to more than 8,000 (Samolyk 2007). Another key profitability driver is repeat business, which lowers costs and losses (Stegman 2007).

Payday loans are labor intensive, requiring personal interactions each time borrowers request or renew a loan. If the borrower does not repay the loan at maturity, the loan can be renewed or “rolled over” by paying the finance charge and holding the check for another specified period. An independent report of state regulatory data found that payday loan borrowers take out an average of eight loans a year, with an average loan size of $375, but spend a staggering $520 in interest payments (Pew Charitable Trusts 2012).

Payday loan customers suffer from financial stress. Typical borrowers are more likely to be racial minorities (particularly African Americans), younger, earn moderate incomes, and not have a college degree (Pew Charitable Trusts 2012). Their high-risk profile often makes them ineligible for conventional loans (Skiba and Tobacman 2009).

Banks that survive the consolidation process participate in a broader range of services, but they typically shift their business toward large capital market participants (Samolyk 2007). Berger and colleagues (1999) argue that this shift occurs either because of improvements in efficiency or increases in size or organizational complexity. The economics of loan transactions are such that operating costs increase less than proportionately with loan size. In other words, producing larger loans has lower operating costs per dollar loaned than producing smaller loans. This undermines banks’ ability to provide
services that appear less efficient, including small accounts with higher-risk loans (Avery et al. 1997; Barnett 2008).1

Like banks, credit unions gain economies of scale and offer more products and services as they grow (Wilcox 2005). However, their status as nonprofits and tax-exempt organizations allows credit unions, especially larger ones, to provide credit at more competitive rates and assume more risks (Feinberg and Rahman 2001). For instance, the high fixed cost of information processing equipment helps larger unions in lending to harder-to-assess borrowers (Wheelock and Wilson 2011). Kaushik and Lopez (1994) show that larger credit unions feature a more diffuse membership, lower minimum incomes, and smaller direct deposit requirements. These conditions broaden the set of customers eligible for loans and lower the rates for small loans (Feinberg 2001).

Increasing average scale among credit unions can improve the supply of small loans to customers in the market periphery typically targeted by payday lenders. Also, consolidation among banks and credit unions intensifies competition between the two sectors, but larger banks appear to be significantly stronger competitors than larger credit unions. Bank consolidation will weaken credit unions and indirectly strengthen payday lenders.

The resource partitioning model proposes a specific form of competitive dynamic among organizations occupying the center, near-center, and periphery. First, the viability of organizations in the periphery declines with increasing average scale among organizations in the near-center. This is because consolidation among near-center organizations results in a stronger set of surviving near-center firms, and they exert greater competitive pressure on firms in the periphery.

**Hypothesis 3:** For payday lenders, the hazard of entry decreases and the hazard of exit increases with increasing market concentration among credit unions.

Second, increasing average scale among organizations in the center leads to a stronger set of surviving center organizations. Stronger center organizations can weaken the viability of organizations in the near-center and indirectly promote the viability of organizations in the periphery.

**Hypothesis 4:** For payday lenders, the hazard of entry increases and the hazard of exit decreases with increasing market concentration among banks.

**Encroachment of banks and credit unions on the fringe.** Provision of high-cost loans remains risky for traditional lenders’ reputation as credible institutions. Kenneth (2008:703) notes that as long as traditional lenders “need to offer loans at high interest rates compared to credit cards and other loans, public policy officials, the media, and consumer advocates will criticize them.”

While high-cost, small loans bear high risks, they retain high margins, and it is not surprising that mainstream lenders have developed services like payday loans. The most successful services are overdraft programs, which allow customers to overdraw their accounts by a few hundred dollars for a short time period on payment of fees.

Mainstream lenders offer overdraft protection as a “courtesy,” reserving the right to refuse to cover any overdrafts and maintaining that payment is discretionary. Customers do not know for certain that the lender will honor the payment. Using its right of set-off, the lender pays itself back automatically for the loan and its fees from the next deposit made to the customer’s account.

An FDIC (2008) survey shows that over 40 percent of all banks and 77 percent of the larger ones operated at least one formal overdraft program. During the 2000s, these fees reached an estimated 74 percent of revenues from deposit account service charges and 6 percent of banks’ net operating revenues.2

Overdraft customers are younger households with moderate income, a socioeconomic profile akin to users of payday loans. Both services meet an immediate need for a cash advance. Borrowing patterns also have similarities (Melzer 2011). Data from a national phone survey indicate that repeat
overdrafts, like payday loans, are common—nearly 10 percent of customers borrow more than 10 times per year (FDIC 2009). Service attributes such as flat fees and limited loan amounts resemble payday loans. The median fee charged in 2007 was $27, and the average amount borrowed was $70 (FDIC 2008).

Analysts as well as customers and lenders themselves view overdraft programs as partial substitutes to payday loans (Barr 2004; Caskey 2002; Fusaro 2010; Samolyk 2007; Stegman 2007; Zinman 2010). Consumer advocacy groups, such as the Consumer Federation of America, also claim that “overdraft loans are very similar to payday loans. Consumers without enough money in the bank to last until the next payday get a cash advance by overdrawing their account by check” (Fox and Woodall 2005:5).

However, mainstream lenders do not characterize overdrawn accounts as “bad” behavior (Caskey 2002:42). Eligible customers are encouraged to make use of the service whenever they need it. Overdrafts are described as a “typical middle-class product for short-term needs that are a normal part of life” (Kenneth 2008:672). Mainstream lenders also promote overdraft services almost as if they were payday loans. Stegman (2007:182) quotes a 2003 bank advertisement: “Access your Paycheck Before you have it! Sounds too good to be true? Well it isn’t, now start writing checks before you get paid without the worry of returned checks.”

The expansion of traditional lenders in services similar to payday loans blurs the boundary between reputable and disreputable credit. Such encroachment strategies can result in a transfer of legitimation to the market fringe and increase the viability of payday lenders.

Hypothesis 5: The greater the value of overdraft credit supplied by traditional lenders, the higher the entry rate and the lower the exit rate of payday lenders.

METHODS

First, we review the position of customer groups in the U.S. consumer credit market and provide some indication that customers in the low-end periphery are positioned closer to the near-center of the market than the center. We combined two area-stratified national survey instruments: (1) the Federal Reserve’s 2007 Survey of Consumer Finances (SCF), which allows us to compare usage of banks and credit unions (Hofmeier 2008; Lee 2007); and (2) the 2008 survey of household participation in the banking system by the Federal Deposit Institute Corporation (FDIC 2008), which examines usage of payday lenders and mainstream lending institutions. The SCF shows that roughly 63 percent of U.S. households use only banks, 6 percent use only credit unions, 24 percent use both, and the rest are unbanked (Bucks et al. 2009). The FDIC data further indicate that 3.3 percent of households use payday lenders and are part of the underbanked population with limited access to checking and savings accounts at traditional lenders.3

Table 1 summarizes the sociodemographic data from these sources.4 We use one-way analyses of variance (ANOVA) to examine five main characteristics—age, household income, educational attainment, race, and marital status—of bank, credit union, and payday users. The table contains the means, ANOVA results, F-statistics of the multiple group comparisons, and Bonferroni tests of post-hoc pairwise group comparisons. We measure age and income as continuous and interval variables, respectively, and means can be easily computed and compared. For the ordinal variable educational attainment, and the categorical variables race and marital status, we first construct categories replicating cutoffs used by previous studies in explaining payday usage (e.g., Pew Charitable Trusts 2012) and then test for differences in means across categories.

Compared with bank users and credit union members, the payday user group includes significantly higher proportions of African Americans, divorced individuals, younger adults, people earning less than $50,000, and people without a high school diploma. In every case, the means for payday
Table 1. Means and Analysis of Variance for Sociodemographic Characteristics of Payday, Credit Union, and Bank Users

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>Payday Users (P)</th>
<th>Credit Union Users (C)</th>
<th>Bank Users (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F = 4123.96</strong> **</td>
<td></td>
<td>C vs. P&lt;sup&gt;a&lt;/sup&gt; = 19.504 **</td>
<td>B vs. C&lt;sup&gt;a&lt;/sup&gt; = 6.626 **</td>
<td>B vs. P&lt;sup&gt;a&lt;/sup&gt; = 26.131 **</td>
</tr>
<tr>
<td><strong>Household Income</strong></td>
<td>2.681 (1.170)</td>
<td>1.911 (.872)</td>
<td>2.304 (1.016)</td>
<td>2.938 (1.151)</td>
</tr>
<tr>
<td><strong>F = 1504.28</strong> **</td>
<td></td>
<td>C vs. P&lt;sup&gt;a&lt;/sup&gt; = .393 **</td>
<td>B vs. C&lt;sup&gt;a&lt;/sup&gt; = .634 **</td>
<td>B vs. P&lt;sup&gt;a&lt;/sup&gt; = 1.027 **</td>
</tr>
<tr>
<td><strong>Education: Less than High School Diploma</strong></td>
<td>.372 (.483)</td>
<td>.540 (.498)</td>
<td>.449 (.498)</td>
<td>.334 (.472)</td>
</tr>
<tr>
<td><strong>F = 227.91</strong> **</td>
<td></td>
<td>C vs. P&lt;sup&gt;a&lt;/sup&gt; = -.092 **</td>
<td>B vs. C&lt;sup&gt;a&lt;/sup&gt; = .115 **</td>
<td>B vs. P&lt;sup&gt;a&lt;/sup&gt; = -.207 **</td>
</tr>
<tr>
<td><strong>Race: African American</strong></td>
<td>.103 (.304)</td>
<td>.210 (.408)</td>
<td>.125 (.330)</td>
<td>.068 (.251)</td>
</tr>
<tr>
<td><strong>F = 394.38</strong> **</td>
<td></td>
<td>C vs. P&lt;sup&gt;a&lt;/sup&gt; = -.086 **</td>
<td>B vs. C&lt;sup&gt;a&lt;/sup&gt; = -.057 **</td>
<td>B vs. P&lt;sup&gt;a&lt;/sup&gt; = -.143 **</td>
</tr>
<tr>
<td><strong>Marital Status: Divorced</strong></td>
<td>.118 (.323)</td>
<td>.154 (.361)</td>
<td>.156 (.364)</td>
<td>.120 (.326)</td>
</tr>
<tr>
<td><strong>F = 16.15</strong> **</td>
<td></td>
<td>C vs. P&lt;sup&gt;a&lt;/sup&gt; = .003</td>
<td>B vs. C&lt;sup&gt;a&lt;/sup&gt; = -.037 **</td>
<td>B vs. P&lt;sup&gt;a&lt;/sup&gt; = -.033 **</td>
</tr>
</tbody>
</table>

Note: Clustered standard errors are in parentheses.

<sup>a</sup>Bonferroni comparison test.
<sup>b</sup>Household income: 1 = less than $25,000; 2 = between $25,000 and $49,999; 3 = between $50,000 and $99,999; 4 = equal to or above $100,000.

*p < .05; **p < .01 (two-tailed tests).
users are closer to the means for credit union members than for bank users. The only departure is the nonsignificant difference of divorced status between payday users and credit union members.

Next, we turn to our statistical analysis. We use data from 1994 to 2008 in the state of Wisconsin, which we chose for three main reasons. First, the state permits payday lending and was one of the first where the industry emerged (Noyes 2006) (after Tennessee, for which comprehensive data could not be collected). At the time of writing, no federal regulation deals explicitly with fringe lenders. However, like all financial service providers, these businesses are subject to legal and regulatory restrictions.

At the end of our study period, payday lenders operated in 33 states; other states banned or limited their activities by passing usury laws. State-level restrictions on payday lenders vary, but they include limitations on loans’ maximum size, terms, and fees; the number of loans to a single customer at one time; and the number of times a loan can be renewed. In Wisconsin, payday lenders are subject to licensing, examination, and reporting requirements. For example, they must have a net worth of at least $50,000. To charge interest greater than 18 percent APR, lenders must obtain a license from the Department of Financial Institution’s (DFI) Division of Banking.5 The DFI also examines rule violations and reviews charges, refunds, and procedures for nonpayment (Noyes 2006). During the study period, Wisconsin law imposed few restrictions and no statutory maximum on the interest rates or fees charged by these lenders.

Second, payday lenders in Wisconsin conform to patterns described for the United States generally (Caskey 2002). In less than 10 years, the volume of payday loans grew almost 20 times, from 80,000 in 1996 to more than 1.5 million, totaling over $506 million in 2004 (Noyes 2006). Figure 1 shows the growth of payday stores in Wisconsin counties during the study period and suggests that fringe lending spread to most locations.

Finally, although all states maintain and publish lists of licensed payday lenders, it is rare for a state to report the opening date of each location (Damar 2009). Since the opening date of a store is crucial for analysis of vital rates, Wisconsin was an ideal case for studying payday lenders.

Data

Data on payday lenders come from the DFI of Wisconsin (WDFI), which regulates and licenses financial services in the state and reports the opening and closing date and location of each licensee. For banks, the primary source of information is the Bank Data and Statistics database of the Federal Deposit Insurance Corporation (FDIC). The FDIC’s Institution Directory provides financial and historical information for every bank institution, and its Summary of Deposits has deposit and location data for bank branches. For credit unions, the primary source is the National Credit Union Administration’s and the Office of Credit Unions’ database.6 Data for the control variables are drawn from the U.S. Census Bureau, the Bureau of Economic Analysis, and the County and City Data Book.

We compiled organizational life-history data on all licensed payday lenders, banking institutions (FDIC-insured commercial banks, FDIC-supervised savings banks, and insured branches of foreign banks), and credit unions, operating in Wisconsin from 1994, the year of entry of the first payday lending outlet, to 2008.

Online, unlicensed, and illegal lenders do not provide enough information about their transactions (Mann and Hawkins 2007; Samolyk 2007). Our analyses exclude these businesses, as well as other alternative credit forms like pawning, which are distinct lending options, because they are collateralized by tangible personal property (FDIC 2009). We collected data on check cashing businesses, another type of alternative credit service, and use them in supplementary analyses described after our main results.

Variables and Estimation

Borrowers secure loans in payday stores and we model the vital rates at the store level. We
follow prior research that regards entry rates as a stochastic process generating event counts where the organizational population in each location is the unit at risk of experiencing an event (Carroll and Hannan 2000). The dependent variable of this analysis is the annual number of new stores in each county in Wisconsin.

The first of three main covariates is the annual level of market concentration among credit unions in each county, measured by the Herfindahl index, a conventional indicator

Figure 1. Number of Payday Stores in Wisconsin Counties, 1994 and 2008
Note: Ranges based on natural breaks optimization method.
used in ecological studies as well as other economic and sociological research on markets. The index is equal to \( \sum_{c \in C} d^2(c, t) \), the sum of the squared market shares of each credit union \( c \) measured over deposits \( d \) in year \( t \), and \( C \) is the set of credit unions headquartered in the county.\(^7\) The second covariate measures the Herfindahl index of market concentration over deposits for bank institutions in each county, and the index is equal to \( \sum_{b \in B} d^2(b, t) \), the sum of the squared market shares of each bank institution \( b \) measured over deposits \( d \) in year \( t \), and \( B \) is the set of banks operating in the county. Institution-level deposits are aggregated from branch-level data.

The third main covariate measures the value in dollars of the extension of overdraft credit for banks in addition to the fee income for credit unions operating in each county in each year. Overdraft credit is defined by the “related plans” in the net loans and leases section of each bank’s balance sheet as all extensions of credit to individuals for household, family, and other personal expenditures arising from prearranged overdraft plans and other credit plans not accessed by credit cards.\(^8\) The supply of loans varies with the number of branches in which loans can be offered, so we weight the variable by the relative frequency of branches operated by a bank in each county. For credit unions, fee income is measured by the value of fees charged to members for services, including overdraft fees. The variable shows a skewed distribution and we log-transform it.

One key alternative explanation for the proliferation of payday lenders revolves around consumer credit demand. We include time-varying controls measuring the size and sociodemographic characteristics of each credit market. Human population in each county (divided by 1,000,000) accounts for customer base size. We add a control for the level of urbanization of each county, measured with the urban–rural continuum code scheme, ranging from one for metropolitan counties to nine for the most rural (Brown, Hines, and Zimmer 1975). Three variables control for sociodemographic variation in household borrowing: the proportion of African Americans, the proportion with less than a high school diploma, and the median age of the population in each county (Caskey 1994, 2002; FDIC 2008). The likelihood of payday borrowing appears more pronounced at moderate levels of income, and we include a linear and a quadratic term of median household income (in dollars, divided by 100,000). We also control for credit supply: we include the number of payday loan stores, credit unions, and bank branches in operation in each county (Carroll and Hannan 2000). Calendar year accounts for linear time trends.

County-level counts of payday loan store entries show overdispersion, which arises in part from the observations with zero entries. Therefore, we model entry rates using the zero-inflated negative binomial model (Long 1997). We expect the likelihood of zero entry to be influenced by the market characteristics described earlier, in addition to two specific variables found to affect the initial entry of fringe businesses—crime rates and the presence of military bases (Peterson and Graves 2005).

To analyze exit rates, we estimate the hazard of exit of each payday store with a piecewise exponential specification of duration dependence. This approach splits the store age, our measure of duration, into time pieces. The baseline exit rate is specified as constant within each timepiece but can vary across pieces. The piecewise model does not require strong assumptions about the exact form of duration dependence, and after exploratory analyses, we decided that a reasonable specification uses break points at three, five, and ten years, corresponding to four intervals with the last open on the right. The first segment includes spells within the first three years of a store’s age, the second segment includes spells between years three and five, the third segment includes spells between years five and ten, and the fourth segment includes spells beyond ten years. The number of store-years at risk of exiting from 1994 through 2008 is 5,129, and the number of observed exits is
308 (out of 824 stores), producing a simple hazard of exit of .06.

The main covariates in the exit rate analysis are the Herfindahl indices of market concentration for credit unions and banks, and the overdraft credit. The control variables are identical to the ones used in the entry rate analysis. In addition, the hazard rate models control for organizational age as described earlier, and organizational size measured as the number of other stores operated by the firm.

FINDINGS

Tables S1 through S5 in the online supplement provide definitions of the variables in the analyses and display the summary statistics. On average, from 1994 to 2008, each county experienced the entry of three new payday loan stores every year. Milwaukee County had the highest number of annual entries, with a maximum of 30 in 2005. Each firm operates an average of three stores, and stores have industry tenure of about four years. Market concentration is higher among banks than credit unions, at levels that merger guidelines consider moderate-to-high and moderate, respectively (http://www.justice.gov/atr/public/guidelines/hmg-2010.html#5c). Our data indicate that in each county, the value of overdraft credit, on average, amounts to $562,000 for banks and about $247,000 for credit unions. These figures, which increased significantly in the 2000s, represent over 9 percent of the total value of loans to individuals.

Table 2 reports the analysis of entry rates of payday loan stores. The unit of analysis in the entry rate regressions is the county-year, and the number of observations is 1,080 (72 counties times 15 years). Model 1 in Table 2 presents the main estimates of the zero-inflated negative binomial model of the entry rates of payday lending outlets. The Vuong test compares the model fit of nonnested models and supports the zero-inflated negative binomial model over the standard negative binomial model ($z = 1.68, p = .046$) and the zero-inflated Poisson model ($Chi^2 = 40.57, p < .000$). The coefficient of the Herfindahl index for credit unions shows a negative and statistically significant sign on the entry rates of payday lenders. The effect of any covariate can be evaluated in terms of a multiplier of the unobserved entry rate. This multiplier is obtained by exponentiating the product of the estimated coefficient of any variable over the range of values for that particular variable. A multiplier below, equal, or above one indicates, respectively, that a variable reduces, does not affect, or increases the rate. For credit union concentration, an increase from .20 to .35 (a one-standard-deviation increase above the mean) reduces the multiplier of the rate by roughly 5.5 percent, from .927 to about .876.

These estimates also show support for the prediction that the higher the market concentration among banks, the higher the entry rate of payday stores. In this case, a one-standard-deviation increase in bank concentration (from .40 to .80) increases the rate by 85.5 percent, from 1.85 to about 3.44. The dollar value of overdraft programs by banks and credit unions also shows a positive and significant coefficient. This is consistent with the argument that traditional lenders can encroach into the low-end periphery; but, when they do, the viability of payday lenders will be enhanced. These results support Hypotheses 3, 4, and 5 for entry rates.

These estimates yield additional noteworthy effects among the control variables. In line with previous studies, more populated counties experience a higher likelihood of entry by payday lenders (Stegman 2007). Payday store entry shows an inverted U-shaped and statistically significant relationship with household income. The inflection point in the estimates is reached at .45, or $45,000 dollars, within the moderate income bracket, as found in previous research on payday lending (Caskey 1994, 2002; Pew Charitable Trusts 2012). Coefficient estimates for median age, education attainment, and African Americans are in the expected direction but do not reach statistical significance. The negative and significant effect of payday
### Table 2. Entry Rates of Payday Lenders in Wisconsin, 1994 to 2008 (Zero-Inflated Negative Binomial Regression)

<table>
<thead>
<tr>
<th></th>
<th>Model 1. Payday Stores</th>
<th>Coeff.</th>
<th>S.E.</th>
<th>Model 2. Payday Firms</th>
<th>Coeff.</th>
<th>S.E.</th>
<th>Model 3. Payday and Check Cashing Stores</th>
<th>Coeff.</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-13.468**</td>
<td>(2.646)</td>
<td></td>
<td>-13.832**</td>
<td>(2.599)</td>
<td></td>
<td>-10.540**</td>
<td>(2.115)</td>
<td></td>
</tr>
<tr>
<td>Market Concentration Credit Unions (Herfindahl Index)</td>
<td>-.376*</td>
<td>(.182)</td>
<td></td>
<td>-.339*</td>
<td>(.174)</td>
<td></td>
<td>-.427**</td>
<td>(.149)</td>
<td></td>
</tr>
<tr>
<td>Market Concentration Banks (Herfindahl Index)</td>
<td>1.545*</td>
<td>(.739)</td>
<td></td>
<td>1.782*</td>
<td>(.609)</td>
<td></td>
<td>1.215*</td>
<td>(.568)</td>
<td></td>
</tr>
<tr>
<td>Ln (Overdrafts of Banks and Credit Unions, in Dollars)</td>
<td>.099**</td>
<td>(.021)</td>
<td></td>
<td>.084**</td>
<td>(.017)</td>
<td></td>
<td>.081**</td>
<td>(.016)</td>
<td></td>
</tr>
<tr>
<td>County Population, in Millions</td>
<td>.762**</td>
<td>(.243)</td>
<td></td>
<td>.832**</td>
<td>(.242)</td>
<td></td>
<td>.872**</td>
<td>(.188)</td>
<td></td>
</tr>
<tr>
<td>Proportion African American Population</td>
<td>.017</td>
<td>(.015)</td>
<td></td>
<td>.014</td>
<td>(.013)</td>
<td></td>
<td>.338*</td>
<td>(.147)</td>
<td></td>
</tr>
<tr>
<td>Median Age of Population, in Years</td>
<td>-.024</td>
<td>(.027)</td>
<td></td>
<td>-.019</td>
<td>(.025)</td>
<td></td>
<td>-.025</td>
<td>(.022)</td>
<td></td>
</tr>
<tr>
<td>Proportion of Population with Less than High School Diploma</td>
<td>.268</td>
<td>(1.354)</td>
<td></td>
<td>1.315</td>
<td>(1.350)</td>
<td></td>
<td>-.340</td>
<td>(1.175)</td>
<td></td>
</tr>
<tr>
<td>Median Household Income, in 100,000 Dollars</td>
<td>16.185*</td>
<td>(5.894)</td>
<td></td>
<td>13.474</td>
<td>(6.856)</td>
<td></td>
<td>.503</td>
<td>(5.080)</td>
<td></td>
</tr>
<tr>
<td>Urban–Rural Code (1 = most urban, 9 = most rural)</td>
<td>-18.381**</td>
<td>(5.713)</td>
<td></td>
<td>-16.361*</td>
<td>(6.390)</td>
<td></td>
<td>-2.629</td>
<td>(4.936)</td>
<td></td>
</tr>
<tr>
<td>Number of Payday Stores</td>
<td>-.022**</td>
<td>(.004)</td>
<td></td>
<td>-.029**</td>
<td>(.007)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Payday and Check Cashing Stores</td>
<td>-</td>
<td></td>
<td></td>
<td>-0.10*</td>
<td>(.004)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Credit Unions</td>
<td>.003</td>
<td>(.007)</td>
<td></td>
<td>-.014*</td>
<td>(.007)</td>
<td></td>
<td>.007</td>
<td>(.008)</td>
<td></td>
</tr>
<tr>
<td>Number of Bank Branches</td>
<td>.0002</td>
<td>(.0004)</td>
<td></td>
<td>.0001</td>
<td>(.0003)</td>
<td></td>
<td>-.001</td>
<td>(.001)</td>
<td></td>
</tr>
<tr>
<td>Time Trend</td>
<td>.124**</td>
<td>(.025)</td>
<td></td>
<td>.115**</td>
<td>(.029)</td>
<td></td>
<td>.145**</td>
<td>(.021)</td>
<td></td>
</tr>
<tr>
<td>Alpha</td>
<td>.218</td>
<td>(.065)</td>
<td></td>
<td>.000</td>
<td>(.000)</td>
<td></td>
<td>.137</td>
<td>(.037)</td>
<td></td>
</tr>
<tr>
<td>Log-pseudolikelihood</td>
<td>-879.204</td>
<td></td>
<td></td>
<td>-749.353</td>
<td></td>
<td></td>
<td>-1,031.573</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chi²</td>
<td>1,848.91**</td>
<td></td>
<td></td>
<td>829.90**</td>
<td></td>
<td></td>
<td>572.72**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>1,080</td>
<td></td>
<td></td>
<td>1,080</td>
<td></td>
<td></td>
<td>1,080</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Clustered standard errors are in parentheses. Inflate equation (not reported) includes Reported Crimes, Proportion with Less than High School Diploma, Median Household Income, Proportion Blacks, and Presence of Military Bases.  
* p < .05; ** p < .01 (two-tailed tests).
lender density suggests these businesses experience competition from crowding in the same location.

Table 3 reports the analysis of exit rates of payday loan stores. Model 1 in Table 3 presents estimates of a piecewise constant hazard rate regression model of exit rates of payday loan stores. Exit rates of these businesses increase with greater concentration among credit unions and decrease with greater concentration among banks. In these estimates, both coefficients are statistically significant ($p = .023$ and $p = .022$, respectively). These results support Hypotheses 3 and 4 and buttress our findings from the entry rate analysis, providing evidence for the interdependence between organizations in the center, near-center, and periphery. The effects are also substantive: the exit rate increases by roughly 4.6 percent with a one-standard-deviation increase in credit union concentration, and decreases by about 78 percent with an equivalent increase in bank concentration. Model 1 also shows that exit rates of payday lenders significantly decrease with greater overdrafts, supporting Hypothesis 5.

Although we do not observe evidence of significant age dependence, the estimates indicate the presence of negative size dependence. Damar (2009) argues that each outlet can use expertise shared by other offices in screening loan applicants. Payday lenders are more viable in more populous counties. These estimates also show that exit rates decrease with a higher proportion of African Americans. We find a curvilinear relationship with median household income, although the second-order term does not reach statistical significance in this specification (it does in the next two, at $51,000$ and $56,000$, respectively). Finally, the positive effect of payday lender density on the exit rate suggests the presence of local competition in line with results of the entry rate analysis.

Table A1 in the Appendix models the growth rates of banks’ total assets in Wisconsin using fixed-effects regression; we find that aggregate size difference from larger organizations significantly reduces growth, supporting Hypothesis 1. Table A2 in the Appendix analyzes credit unions’ exit rates with piecewise constant hazard rate regression, similar to the exit rate analysis in Table 3. Credit unions show significantly higher exit rates with greater market concentration among banks, supporting Hypothesis 2.

We now turn to additional analyses that test the robustness of our findings and address alternative explanations.

**Level of analysis.** One concern is that we may have measured the vital rates of payday lenders at the wrong level of analysis. Model 2 in Table 2 replaces the count of new stores with the count of new firms in each county, and Model 2 in Table 3 estimates a conditional fixed-effects negative binomial regression model of the count of store closings for each firm. One advantage of this approach is that it directly accounts for unobserved heterogeneity at the firm level. The patterns of findings in both the entry and exit rate analyses appear remarkably similar to those in the main specifications.

**Heterogeneity.** Our estimates might be biased by the uniqueness of payday lenders within the fringe banking sector. Model 3 in Tables 2 and 3 estimates the entry and exit rates of payday lenders along with check cashers, another form of alternative credit service that cashes pay and government checks for a percentage of the check’s face value (Caskey 1994, 2002). The patterns do not change significantly from the models limited to payday lenders.

In a model not shown for brevity, we estimated random-effects corrections in the piecewise regression using shared frailties (Blossfeld and Rohwer 2002). In contrast to fixed-effects models that include only censored cases (with variation in exit counts), this approach allows us to include censored and uncensored cases. The frailty effects are not significant ($X^2 = .00$, 1 d.f., $p = 1.00$), and the pattern of results remains the same.

**Ecological fallacy.** Our regressions using county-level measures may infer incorrectly about the links between vital rates and covariates at lower levels of aggregation. We
Table 3. Exit Rates of Payday Lenders in Wisconsin, 1994 to 2008 (ML Estimates of Piecewise Exponential and Conditional Fixed-Effects Negative Binomial Regression)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1. Payday Stores</th>
<th></th>
<th>Model 2. Payday Firms</th>
<th></th>
<th>Model 3. Payday and Check Cashing Stores</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Piecewise Exponential</td>
<td></td>
<td>Conditional Fixed-Effects Negative Binomial</td>
<td></td>
<td>Piecewise Exponential</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coeff.</td>
<td>S.E.</td>
<td>Coeff.</td>
<td>S.E.</td>
<td>Coeff.</td>
<td>S.E.</td>
</tr>
<tr>
<td>Constant</td>
<td>11.360</td>
<td>(.41.450)</td>
<td>.508*</td>
<td>(.191)</td>
<td>.489*</td>
<td>(.208)</td>
</tr>
<tr>
<td>Market Concentration Credit Unions (Herfindahl Index)</td>
<td>.649*</td>
<td>(.285)</td>
<td>.508*</td>
<td>(.191)</td>
<td>.489*</td>
<td>(.208)</td>
</tr>
<tr>
<td>Market Concentration Banks (Herfindahl Index)</td>
<td>−5.039*</td>
<td>(2.199)</td>
<td>−2.859*</td>
<td>(1.443)</td>
<td>−2.936*</td>
<td>(1.161)</td>
</tr>
<tr>
<td>Ln (Overdrafts of Banks and Credit Unions, in Dollars)</td>
<td>−.183**</td>
<td>(.051)</td>
<td>−.082*</td>
<td>(.034)</td>
<td>−.123**</td>
<td>(.035)</td>
</tr>
<tr>
<td>Payday Lender Age, 0 &lt; u ≤ 3</td>
<td>−4.118</td>
<td>(3.014)</td>
<td>−.082*</td>
<td>(.034)</td>
<td>−.123**</td>
<td>(.035)</td>
</tr>
<tr>
<td>Payday Lender Age, 3 &lt; u ≤ 5</td>
<td>−4.451</td>
<td>(3.024)</td>
<td>−.082*</td>
<td>(.034)</td>
<td>−.123**</td>
<td>(.035)</td>
</tr>
<tr>
<td>Payday Lender Age, 5 &lt; u ≤ 10</td>
<td>−4.194</td>
<td>(3.011)</td>
<td>−.123**</td>
<td>(.035)</td>
<td>−.123**</td>
<td>(.035)</td>
</tr>
<tr>
<td>Payday Lender Age, u &gt; 10</td>
<td>−3.165</td>
<td>(3.029)</td>
<td>−.123**</td>
<td>(.035)</td>
<td>−.123**</td>
<td>(.035)</td>
</tr>
<tr>
<td>Payday Lender Age, in Years</td>
<td>−.053</td>
<td>(.036)</td>
<td>.031</td>
<td>(.047)</td>
<td>−.053</td>
<td>(.036)</td>
</tr>
<tr>
<td>Payday Firm Size (Number of Stores)</td>
<td>−.216**</td>
<td>(.054)</td>
<td>.436**</td>
<td>(.047)</td>
<td>−.208**</td>
<td>(.039)</td>
</tr>
<tr>
<td>County Population, in Millions</td>
<td>−.864*</td>
<td>(.396)</td>
<td>−1.521*</td>
<td>(1.417)</td>
<td>−.975*</td>
<td>(1.309)</td>
</tr>
<tr>
<td>Proportion African American Population</td>
<td>−.002**</td>
<td>(.0001)</td>
<td>−.012**</td>
<td>(.005)</td>
<td>−.025**</td>
<td>(.005)</td>
</tr>
<tr>
<td>Median Age of Population, in Years</td>
<td>.105*</td>
<td>(.056)</td>
<td>.031</td>
<td>(.047)</td>
<td>.058</td>
<td>(.340)</td>
</tr>
<tr>
<td>Proportion of Population with Less than High School Diploma</td>
<td>−1.458</td>
<td>(2.266)</td>
<td>−.678</td>
<td>(2.415)</td>
<td>−.104</td>
<td>(1.719)</td>
</tr>
<tr>
<td>Median Household Income, in 100,000 Dollars</td>
<td>−15.945*</td>
<td>(7.380)</td>
<td>−19.040 (10.872)</td>
<td>−19.119**</td>
<td>16.422*</td>
<td>(6.367)</td>
</tr>
<tr>
<td>Urban–Rural Code (1 = most urban, 9 = most rural)</td>
<td>.0001</td>
<td>(.0001)</td>
<td>19.474</td>
<td>(10.587)</td>
<td>19.474</td>
<td>(10.587)</td>
</tr>
<tr>
<td>Number of Payday Stores</td>
<td>-.021</td>
<td>(.090)</td>
<td>.093</td>
<td>(.089)</td>
<td>.093</td>
<td>(.089)</td>
</tr>
<tr>
<td>Number of Payday and Check Cashing Stores</td>
<td>.072**</td>
<td>(.012)</td>
<td>.057**</td>
<td>(.014)</td>
<td>.040**</td>
<td>(.012)</td>
</tr>
<tr>
<td>Number of Payday and Check Cashing Stores</td>
<td>.040**</td>
<td>(.012)</td>
<td>.057**</td>
<td>(.014)</td>
<td>.040**</td>
<td>(.012)</td>
</tr>
<tr>
<td>Number of Credit Unions</td>
<td>−.012</td>
<td>(.018)</td>
<td>.037</td>
<td>(.020)</td>
<td>−.019</td>
<td>(.016)</td>
</tr>
<tr>
<td>Number of Bank Branches</td>
<td>−.006*</td>
<td>(.002)</td>
<td>−.001</td>
<td>(.002)</td>
<td>−.006*</td>
<td>(.002)</td>
</tr>
<tr>
<td>Time Trend</td>
<td>−.011</td>
<td>(.040)</td>
<td>.441**</td>
<td>(.062)</td>
<td>−.030</td>
<td>(.030)</td>
</tr>
<tr>
<td>Log-pseudolikelihood</td>
<td>−727.642</td>
<td></td>
<td>−548.559</td>
<td></td>
<td>−1,059.054</td>
<td></td>
</tr>
<tr>
<td>Chi²</td>
<td>21,391.29**</td>
<td></td>
<td>355.27**</td>
<td></td>
<td>32,126.06**</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>5,129</td>
<td></td>
<td>2,380</td>
<td></td>
<td>8,734</td>
<td></td>
</tr>
</tbody>
</table>

Note: Clustered standard errors are in parentheses.  
*p < .05; **p < .01 (two-tailed tests).
coded address data for bank branches, credit unions, and payday stores in Wisconsin and matched them to census places and zip codes. The average number of banks, credit unions, and payday stores in each geographic unit is below one, suggesting we cannot measure market concentration meaningfully at lower levels of data aggregation. With slightly revised specifications, we modeled the number of payday stores in each place or zip code using two dummy variables indicating the presence of banks or credit unions as covariates. Not all sociodemographic controls are available, and we added fixed effects for zip code or census place to account for unobserved heterogeneity across locations. Consistent with the main analyses, we find significantly more payday lenders in locations with banks, and fewer payday lenders in locations with credit unions.

Alternative explanations. A plausible alternative dynamic would assume three separate markets with resource partitioning occurring in both the market center and near-center. By this account, resource partitioning among larger banks should lead to the growth of smaller, community banks, which would reduce the viability of larger credit unions. Resource partitioning among larger credit unions, in turn, would lead to the improved viability of smaller credit unions, which would lower the viability of payday lenders.

The graphs in Figure 2 depict the number (left panel) and assets (right panel) of banks and credit unions in Wisconsin. In the upper four graphs, the number of non-community banks decreased slightly, while their assets increased tenfold. The number of community banks almost halved, while their assets increased about 20 percent. If we distinguish between savings and loan institutions and other bank lenders, the graphs show that the number of savings and loan institutions and other bank lenders, the graphs show that the number of savings and loan institutions decreased by 40 percent, while their assets remained stable.

In the lower four graphs, the number of large credit unions increased moderately, while the number of small credit unions fell to less than half the initial level. The assets of large credit unions more than tripled, while the assets of small credit unions decreased by more than twofold. The pattern for single-versus multi-branch credit unions follows a similar trajectory (branch data are available only for the period 2003 to 2008). These trends contradict the multiple-partitioning hypothesis. Additional unreported analyses similar to the main specifications in Tables 2, 3, A1, and A2 found that (1) significant effects of market concentration on the vital rates of payday lenders do not depend on the distinction between smaller and larger credit unions or banks; (2) smaller banks grow at lower rates and growth is further reduced by the presence of larger competitors; and (3) exit rates of credit unions do not vary particularly with concentration of smaller banks (Table A2 in the Appendix further shows that mid-sized credit unions have lower exit rates than do large and small credit unions). While the existence of multiple resource-partitioning processes remains an intriguing possibility, we do not find supporting evidence in these data.

Alternative demand and supply mechanisms could potentially explain some of our findings. In particular, neglecting to measure short-term shocks to credit demand or the increasing market power of credit suppliers might bias our estimates of the overdraft and concentration effects, respectively. Adding measures of the yearly change in federal funds rates and the lagged number of federally declared natural disasters in each county as proxies for credit shocks, we find that the coefficient for the overdrafts covariate reduces very slightly (as expected with omission of unobservables) but remains statistically significant net of the proxy variable.

The market power argument has two parts. First, more concentrated banking markets would imply that banks raise prices for their services, including loans and overdrafts. Arguably, this would make entry more attractive to payday lenders. Second, scale advantages for banks and credit unions ought to increase with size, but at a decreasing rate.
Research in finance shows that overdraft services are less, not more, expensive than payday loans (Melzer and Morgan 2013). As described earlier, customers choose payday loans primarily for their quick and easy process, fast approval, and less paper work. These businesses have more convenient locations than do traditional lenders, and payday advances provide more privacy, as they are not included in credit histories (Caskey 2002). Bank services rank fourth among the options considered by payday borrowers (Pew...
Charitable Trusts 2012). Price does not seem the critical competitive factor in this market.

More specifically, fewer and larger banks might engage in anticompetitive behavior and raise prices. In this framework, competition is correlated with measures of concentration, such as the Herfindahl index, but remains omitted in the analyses. Instead of using concentration, recent research focuses on direct measures of bank pricing behavior or market power. One common measure is the Panzar-Rosse H-statistic (Panzar and Rosse 1987), which in banking captures the elasticity of bank interest revenues to input prices. Higher values of the statistic indicate more competitive banking markets, while lower values indicate less competitive markets. We used data from FDIC reports for banks operating in Wisconsin to calculate interest revenues and input prices (the price of deposits calculated as the ratio of interest expenses to total deposits; the price of personnel as the ratio of personnel expenses to assets; and the price of equipment and fixed capital approximated by the ratio of other operating and administrative expenses to total assets). We calculated the H-statistic by regressing the (log of) banks’ interest revenues on (the log of) input prices and then summing the estimated coefficients for each input price. Based on the model reported in Table S6 of the online supplement, the value of the H-statistic for Wisconsin banks is .83 (in a recent study of competition in the U.S. banking sector, Bolt and Humphrey [2012] find a similar H-statistic value of .82). This suggests fairly competitive markets (the H-statistic for perfect competition would be equal to 1). The H-statistic in these estimates covers the entire study period, and we separately calculated annual indices that we used as additional regressors in the payday lender analyses to control for price competition among banks. These additional tests suggest our estimates are not biased by omitted price competition among banks.

Limitations. The consumer credit market features more diversity than we can possibly examine in a single set of analyses. Alternative transaction products and unlicensed lenders offer additional services to segments of the U.S. population with impaired credit (FDIC 2009). We think our main predictions might extend to these fringe businesses, and we hope that future studies will refine the interdependence between mainstream and peripheral organizational forms.

Our study also does not examine the high-end periphery. Previous studies of resource partitioning observe the presence of social and technical boundaries around this market segment that hinder entry by organizations based in the market center (Pólos et al. 2010). Even though the dynamics of fringe banking ought not to change, cost as well as status factors might limit the expansion of mainstream lenders into high-value retail banking. The effect of market consolidation would then hold in the high-end periphery, but resource partitioning would involve some form of collective resistance from specialist lenders.

Finally, organizational forms in the consumer credit market are defined by regulation. This makes the analysis of multiple sets of lenders more tractable, but only replication will determine if the patterns we observed hold in markets where organizational forms are defined differently, for example, through social movement activism or media discourse.

DISCUSSION

Increases in income and consumption might spur growth in demand for consumer finance products generally. The growth of high-cost services like payday loans can also be due to irrational credit decisions, for example, debtors’ unrealistic optimism about the long-term advantages of borrowing, or anchoring on miscalculated price estimates that make debtors vulnerable to manipulation (Peterson 2004).
This study draws attention to the organizational processes linking the emergence of payday lending and the market structure of traditional credit suppliers. Although this connection is often assumed (e.g., Bertrande and Morse 2011; Caskey 1994; Damar 2009; Melzer 2011), it has not been subject to systematic empirical investigation.

**On Theory**

The original model of resource partitioning included only two positions, the center and the periphery, a simplification that accounts only in part for the complexity of organizational forms observed in mature markets (Carroll et al. 2002). A revision was needed that both increased the realism of the model and clarified the mechanism leading to the proliferation of peripheral organizations with the dominance of a few generalists in the core of a market (Hannan et al. 2007). We tested a revised model (Hannan et al. 2007) that involves three rather than two market segments. The distinction between center, near-center, and periphery is crucial. Scale affects the viability of organizations in the center, and larger organizations outperform smaller competitors. Organizations in the near-center are disadvantaged when they face competition from larger survivors in the market center. Declining organizations in the near-center release resources that peripheral organizations can use. Our empirical analyses offer the first comprehensive examination of this unified version of resource partitioning.

Organizational diversity has many facets. Carroll’s (1985) seminal study of the newspaper industry shows that while the decline in the number of generalist newspapers raised fears about editorial homogeneity, these fears were mitigated by the proliferation of specialist newspapers serving audiences in narrower slices of socioeconomic space. Clearly, the improved life chances of specialists can create occupational and entrepreneurial opportunities for traditionally disadvantaged groups, such as women and racial minorities.

However, the positive valuation attributed to specialist organizations in previous research appears largely a function of context—the specialists studied in industries such as brewing and wine often occupy the high-end of the taste distribution. We bring attention to the low-end of the market periphery, where producers supply products and services of low quality or that carry social stigma. In contexts such as payday lending, where the periphery carries a stigma, the potential reputational harm helps explain why the periphery remains segregated, letting specialist organizations thrive.

Research on inequality and lending suggests that looser borrowing constraints directly expand credit for groups with typically limited access to loans (Keister 2002). Lower-income and racial minority households improve their capacity to buy services and goods, from college to insurance to cars, or cover living expenses. But, this expansion leads households to accumulate more debt, and the prohibitive borrowing costs make these same households less and less able to pay back what they borrowed. Economists show that the price increase of household debt causes welfare losses that more than offset these benefits (Campbell and Hercowitz 2009). Lenders gain, but they have to develop riskier and costlier ways to invest profitably. Eventually, this aggravates the income and racial divides that the growing supply of high-cost loans is presumed to reduce.

**On Policy**

Can one gain broader insights from resource partitioning? We point to three implications for consumer credit policy. First, our results suggest that the greater viability of payday lenders is largely due to competitive release: banks eliminate credit unions through scale-based competition, thus releasing resources for payday lenders to draw on. One way to dampen the growth of the payday lending sector is thus to implement policies designed to encourage the survival and growth of credit unions.

Scholars have proposed that smaller community-based credit unions should offer affordable short-term loans to combat the predatory nature of payday lenders (Caskey...
Industry task forces such as the Small Credit Union Committee, and consumer activism like the Bank Transfer Day initiative, also encourage support for small credit unions. Of course, small unions provide valuable services, for instance, they are particularly active in small business loans. However, our analyses suggest small unions are less able to absorb high-risk lending. Larger unions appear better positioned to supply higher risk borrowers and improve access to small-dollar consumer loans for disadvantaged groups. Industry task forces dealing with consumer credit may thus shift their recommendations toward supporting larger unions.

Larger unions might need stronger sponsorship because of their weaker competitive position relative to banks. Bankers argue that the credit union tax exemption is an unfair advantage for large credit unions, and the Ways and Means House Committee has recently made recommendations to eliminate it (Puzzanghera 2013). The repeal of the tax exemption status might not only endanger the future of these institutions, but also worsen credit availability for consumers targeted by payday lenders.

Second, eliminating payday lending does not remove the need for emergency cash (Peterson 2004). Fringe bankers claim to offer a service, which customers prefer. By this logic, the expansion of overdrafts by banks and credit unions ought to erode payday lenders’ success. Our analyses, however, suggest that fringe bankers’ vital rates improve with the expansion of payday loan-like services such as overdrafts. Large banks, including Wells Fargo and U.S. Bank, have started offering products with names like Direct Deposit Advance and Checking Account Advance that are, in effect, payday loans in structure and consequences for borrowers (Pew Charitable Trusts 2012).9 If several states have banned payday lenders, then these bank services, whose side effects include legitimation of high-cost lending, might warrant restrictive regulatory practices.

This argument points to a third implication. The labeling of products and services influences how they are understood and used. Payday customers have limited knowledge of the terms of the contracts, and various biases lead borrowers to be vulnerable to manipulation (Bertrand and Morse 2011). The Truth in Lending Act promotes disclosure but not better understanding of lending contracts (Peterson 2004). Adding uniform price tags with annual percentage rates and advertising the financial hazard of high-cost credit will increase awareness among borrowers and counteract lenders’ incentives to craft complex contractual provisions.

One role of the Consumer Financial Protection Bureau, established in 2010 with the Dodd–Frank Act and supervising payday lenders since 2012, is to keep consumers informed in defense against abusive practices. Anecdotal evidence suggests that increased scrutiny of payday lending is leading to reduced viability for fringe bankers. In several states, database regulations have made it very difficult for payday lenders to roll over loans and have thus eroded their profitability. According to a recent report, the number of licensed payday lending stores in South Carolina fell from 663 at the end of 2009, when the state adopted a database regulation, to 418 at the end of 2011 (Johnson 2013).

We hope future studies will demonstrate the broad relevance of the revised model of resource partitioning. In concluding, we note some similarities between the rise of payday lending and the growth of subprime lending. Fligstein and Goldstein (2010) show that before the recent mortgage crisis, large banks controlled substantial numbers of securities, while specialized conduit businesses were more directly responsible for the proliferation of riskier mortgage securitization tools with lowered lending standards. The strategies of organizations in the center and periphery of the market appear to have intertwined, as resource partitioning theory suggests. The aggressive pursuit of subprime bonds led to leveraging on high-risk assets, ultimately leading to eroded market positions and failures. In this situation, mortgages were systematically overrated, suggesting that large banks’ involvement in “bad credit” might have transferred legitimacy to risky market innovations, encouraging their diffusion.
**APPENDIX**

**Table A1. Growth Rates of Bank Assets in Wisconsin, 1994 to 2008 (Fixed-Effects Regression)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coeff.</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-.764</td>
<td>(.682)</td>
</tr>
<tr>
<td>Ln (Lagged Bank Assets, in Dollars)</td>
<td>.950**</td>
<td>(.004)</td>
</tr>
<tr>
<td>Aggregate Size Difference from Larger Organizations</td>
<td>-.001**</td>
<td>(.0001)</td>
</tr>
<tr>
<td>Community Bank</td>
<td>-.220**</td>
<td>(.018)</td>
</tr>
<tr>
<td>Bank Age, in Years</td>
<td>-.001**</td>
<td>(.0001)</td>
</tr>
<tr>
<td>Prior Acquisition</td>
<td>1.583**</td>
<td>(.026)</td>
</tr>
<tr>
<td>Efficiency Ratio</td>
<td>.036*</td>
<td>(.018)</td>
</tr>
<tr>
<td>State Population, in Millions</td>
<td>.330*</td>
<td>(.133)</td>
</tr>
<tr>
<td>Time Trend</td>
<td>-.012*</td>
<td>(.006)</td>
</tr>
<tr>
<td>Predicted Hazard of Exit</td>
<td>-.154*</td>
<td>(.141)</td>
</tr>
</tbody>
</table>

**Note:** Clustered standard errors in parentheses. 
* p < .05; ** p < .01 (two-tailed tests).

**Table A2. Exit Rates of Credit Unions in Wisconsin, 1994 to 2008 (Piecewise Exponential Regression)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coeff.</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Concentration Banks (Herfindahl Index)</td>
<td>2.749*</td>
<td>(1.123)</td>
</tr>
<tr>
<td>Credit Union Assets, in Millions of Dollars</td>
<td>-.019*</td>
<td>(.009)</td>
</tr>
<tr>
<td>Credit Union Assets²</td>
<td>.0002*</td>
<td>(.0001)</td>
</tr>
<tr>
<td>Credit Union Age, 0 &lt; u ≤ 9</td>
<td>-9.733*</td>
<td>(4.029)</td>
</tr>
<tr>
<td>Credit Union Age, 9 &lt; u ≤ 18</td>
<td>-8.207*</td>
<td>(4.020)</td>
</tr>
<tr>
<td>Credit Union Age, 18 &lt; u ≤ 27</td>
<td>-6.961</td>
<td>(4.047)</td>
</tr>
<tr>
<td>Credit Union Age, u &gt; 27</td>
<td>-5.849</td>
<td>(4.094)</td>
</tr>
<tr>
<td>Federal Charter</td>
<td>-15.248*</td>
<td>(.502)</td>
</tr>
<tr>
<td>County Population in Millions</td>
<td>-7.610*</td>
<td>(3.751)</td>
</tr>
<tr>
<td>Proportion African American Population</td>
<td>12.073**</td>
<td>(4.590)</td>
</tr>
<tr>
<td>Median Age of Population, in Years</td>
<td>-.122*</td>
<td>(.061)</td>
</tr>
<tr>
<td>Proportion of Population with Less than High School Diploma</td>
<td>2.350</td>
<td>(5.359)</td>
</tr>
<tr>
<td>Median Household Income, in 100,000 Dollars</td>
<td>32.769*</td>
<td>(12.404)</td>
</tr>
<tr>
<td>Median Household Income²</td>
<td>-19.569</td>
<td>(12.007)</td>
</tr>
<tr>
<td>Urban–Rural Code (1 = most urban, 9 = most rural)</td>
<td>.186</td>
<td>(.107)</td>
</tr>
<tr>
<td>Number of Credit Unions</td>
<td>.030</td>
<td>(.020)</td>
</tr>
<tr>
<td>Number of Bank Branches</td>
<td>.002</td>
<td>(.002)</td>
</tr>
<tr>
<td>Number of Payday Stores</td>
<td>.003</td>
<td>(.009)</td>
</tr>
<tr>
<td>Time Trend</td>
<td>.099</td>
<td>(.054)</td>
</tr>
<tr>
<td>Left Censoring</td>
<td>-4.449**</td>
<td>(.908)</td>
</tr>
<tr>
<td>Log-pseudolikelihood</td>
<td>-141.238</td>
<td></td>
</tr>
<tr>
<td>Chi²</td>
<td>4,805.78**</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Clustered standard errors in parentheses. 
* p < .05; ** p < .01 (two-tailed tests).
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We received helpful critiques from the ASR editors and reviewers, Anne Bowers, Glenn Carroll, Peter Demerjian, Gary Dymski, Stine Grodal, Michael Hannan, Wes Longhofer, Susan Olzak, Chris Rider, Peter Roberts, L. G. Thomas, Peter Thompson, and seminar participants at Stanford, Emory, McGill, and the “Embeddedness and Beyond” conference at the Higher School of Economics in Moscow. Ron Harris and Michael Page provided able research assistance. The Administrator of the Division of Banking, Department of Financial Institutions, State of Wisconsin provided the payday lender data. Negro acknowledges the support of the Social Enterprise Center at Emory University’s Goizueta Business School. Visentin was supported by the Fellowship for Prospective Researchers no. 125573 from the Swiss National Science Foundation. Errors and omissions remain ours.

Notes
1. Berger and colleagues (2005) note that larger organizational size makes banks less willing to invest in activities that make extensive use of “soft” information, such as spending time and effort to determine the quality of prospective borrowers, which would reduce the problem of adverse selection in lending.
2. The Electronic Fund Transfer Act, requiring banks to obtain customers’ permission before signing them up for overdraft protection programs, took effect in July 2010.
3. Households are identified as unbanked when “none of their members currently has a checking or savings account” (FDIC 2009:10). Underbanked households are defined as “those that have a checking or savings account but rely on alternative financial services. Specifically, underbanked households have used non-bank money orders, non-bank check-cashing services, payday loans, rent-to-own agreements, or pawn shops at least once or twice a year or refund anticipation loans at least once in the past five years” (FDIC 2009:10).
4. The 2007 Current Population Survey contains sociodemographic estimates of the U.S. population to compare with Table 1: African American = 11.5 percent; divorced = 9.7 percent; household income = $50,700; educational attainment = some college. Population age is 37.7 years, a mean noticeably lower than the sample in Table 1, which possibly makes the comparison test more conservative.
5. Payday lending is regulated by Wisconsin Statute chapter 138.
6. We gathered payday lender and credit union data by submitting formal requests to the WDFI and NCUA. General information and search criteria for payday and credit union services are located at https://www.wdfi.org/loi/lfs/pdl/default.htm and http://www.ncua.gov/DataApps/ResearchCU/Pages/default.aspx, respectively. Bank data come from the Institution directories in the Bank Data & Statistics databases of the FDIC website (Industry Analysis section), available at http://www.fdic.gov/bank/statistical/.
7. Deposit data for credit unions are not available at the branch level, and we assume these organizations focus their operations in their chartered county. FOIA call reports show that 79 percent of credit unions in Wisconsin operate two or fewer branches. In unreported analyses, we examined (1) effects of market concentration among credit unions in contiguous counties and using data on the number of branches available from 2003, and (2) effects of concentration for single- and multi-branch credit unions. These distinctions have no bearing on the pattern of estimates.
8. Using or adding the item “service charges on deposit accounts,” which also contains some income from overdraft services for banks, does not change the pattern of findings we report.
9. As we write, some major banks are discontinuing overdraft lending (Fitzpatrick and Enrich 2012).

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