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Jiahuan Lu, Jongmin Shon and Pengju Zhang

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How Do Nonprofits Fail? The Financial Causes of Organizational Dissolution

Jiahuan Lu
jiahuan.lu@rutgers.edu

Jongmin Shon
jmshon@rutgers.edu

Pengju Zhang
pengju.zhang@rutgers.edu

School of Public Affairs and Administration
Rutgers University-Newark
111 Washington Street
Newark, NJ 07102

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Abstract

The financial antecedents of nonprofit dissolution have not been well studied, although there is growing scholarly attention devoted to the dissolution of nonprofit organizations. Using longitudinal data on U.S. public charities from 2005-2015, this study employs the Cox proportional-hazards model to examine the effects of overhead costs and revenue mix on nonprofit dissolution. In particular, we find that spending on employee compensation and fundraising each has a non-linear, U-shaped relationship with the likelihood of nonprofit dissolution. We also find that commercial nonprofits are less likely to dissolve than their non-commercial counterparts. Finally, revenue diversification has a favorable effect on nonprofits' survival prospects. These findings provide important managerial implications for nonprofits to sustain their operations and influence in practice.

Keywords: organizational dissolution, overhead costs, commercial revenue, revenue diversification, Cox proportional-hazards model

INTRODUCTION

The nonprofit sector performs a wide range of social, political, and economic functions, and it has become an indispensable actor in democratic governance. Over the past several decades, the nonprofit sector has experienced unprecedented growth in various regions and countries worldwide (Salamon, Sokolowski, & Haddock, 2017). With this significant development, scholars have examined various aspects of nonprofit growth, such as the founding of nonprofits, the development of financial resources, and the improvement of organizational capacity and performance (Chikoto & Neely, 2014; Foster & Fine, 2007; Lecy & Van Slyke, 2012; Young, 2006). Compared with this large body of literature on nonprofit growth, less scholarly attention has been devoted to studying organizational decline. From a life-cycle perspective, nonprofits may evolve from birth to growth to decline (Stevens, 2001). For example, U.S. public charities had an average annual exit rate of 2.14% for the 1989-2000 period (Harrison & Laincz, 2008). In addition, roughly 14% of human service nonprofits in Los Angeles County were disbanded between 2002 and 2011 (Garrow, 2015), and 7.6% of social economy organizations in the Montreal region dissolved over 2007-2012 (Bouchard & Rousselière, 2016).[1]

Studying nonprofits' termination of function is important because dissolution can cause enormous negative social consequences for both dissolved organizations and their constituents at large. A robust knowledge base on this topic thus has significant implications for nonprofit leaders to develop sensitivity to the causes of dissolution and to identify strategies to prevent it. In the nonprofit literature, the number of studies on organizational dissolution and its underlying causes has been growing in recent decades (Bielefeld, 1994; Fernandez, 2008; Hager, Galaskiewicz, & Larson, 2004; Twombly, 2003; Walker & McCarthy, 2010). A systematical

review of this body of literature (Helmig, Ingerfurth, & Pinz, 2014) concluded that this research field is still small and existing knowledge is fragmented. In particular, it highlighted a puzzle in the existing literature, that is, "on the one hand, financial indicators are used to predict financial health, but, on the other hand, financial issues are not considered major determinants of organizational death" (Helmig et al., 2014, p. 1526). In fact, nonprofits depend on resources to mobilize operations and materialize missions. The way in which a nonprofit manages its resources usually has strong implications for its fate (Froelich, 1999). Building on this assumption, we examine the association between a nonprofit's dissolution risk and its financial management behavior, and in particular, how a nonprofit's overhead costs and revenue mix is correlated with its likelihood of dissolution.

In this study, we combine data from multiple sources to construct a panel dataset of US charitable nonprofits over the period of 2005-2015. The Cox proportional-hazards model finds that employee compensation and fundraising spending each has a curvilinear relationship with the risk of nonprofit dissolution, following a U-shaped pattern. It appears that as a nonprofit's overhead spending increases, its likelihood of dissolution initially decreases, but after a tipping point, further increases in the nonprofit's overhead spending increase its risk of dissolution. We also find that commercial nonprofits (where more than 50% of total revenue comes from program service fees) have a lower chance of dissolution than their non-commercial counterparts. In addition, nonprofits with more diversified revenue portfolios experience lower risks of dissolution on average. Together, nonprofits that primarily rely on commercial income and diversify the remaining revenue sources enjoy much better survival prospects. To our knowledge, our work represents the first attempt to employ large-scale nationwide data to systematically study the financial antecedents of nonprofit dissolution. The work adds new

knowledge to the literature on nonprofit management and provides implications for nonprofits to sustain their operations and impact.

LITERATURE REVIEW

Organizational dissolution has been a prominent theme in organization studies since Whetten's (1980) call for more scholarly attention on organizational decline. Organizational dissolution occurs when an organization "ceases to carry out the routine actions that sustain its structure, maintain flows of resources, and retain the allegiance of its members" (Freeman, Carroll, & Hannan, 1983, p. 694). Over the past thirty years, organizational scholars have examined various internal and external causes of organizational dissolution (see Habersang, Küberling-Jost, Reihlen, and Seckler (2017) and Mellahi and Wilkinson (2004)). In the nonprofit context, research on organizational dissolution has grown gradually since the 1990s, identifying a number of potential factors such as funding streams, neighborhood demographic composition, nonprofit sector density, organizational age, organizational form, organizational size, service fields, and staffing practices (e.g., Bielefeld (1994), Bouchard and Rousselière (2016), Garrow (2015), Hager et al. (2004), Harrison and Laincz (2008), and Twombly (2003)). Our study adds to this growing body of literature on nonprofit dissolution by examining the effects of spending patterns (especially, overhead costs) and revenue structures on organizational dissolution.

Overhead Costs

Conceptually, overhead costs constitute the portion of organizational resources that are devoted to administration and fundraising to support organizational operations. Nonprofits' overhead costs have been a contested topic in research and practice. On the one hand, overhead costs represent a diversion of organizational resources from program outputs (Weisbrod &

Dominguez, 1986). Thus, high overhead costs are often considered an indicator of inefficiency and waste. Research suggests that nonprofits with higher overhead costs are perceived negatively by their constituents and therefore garner lower public confidence and receive less donor support (Gneezy, Keenan, & Gneezy, 2014; Tinkelman & Mankaney, 2007). On the other hand, nonprofits need a reasonable level of overhead costs to maintain organizational effectiveness. The "overhead aversion" described above may push nonprofits to underinvest in their infrastructure, creating a "nonprofit starvation cycle" that unintendedly compromises service quality and organizational viability (Gregory & Howard, 2009; Lecy & Searing, 2015). Nonprofits with robust investments in infrastructure and operations are found to be more likely to expand their capacity and enjoy financial health (Chikoto & Neely, 2014; Greenlee & Trussel, 2000; Wing & Hager, 2004).

We argue that these two seemingly contrasting strands of arguments suggest that the effect of overhead costs on nonprofit dissolution may not be constant; rather, it is curvilinear, following a U-shaped curve. The initial downward slope of a quadratic function represents the quality concern, namely, nonprofits with low overhead costs possess weak infrastructure and effectiveness and thus are less likely to sustain over time. The efficiency concern, however, explains how the downward slope eventually changes direction. When an organization's overhead spending exceeds a reasonable level, more overhead spending undermines organizational efficiency and legitimacy, leading to a higher risk of dissolution. Put differently, there appears to be an optimal level of overhead spending for nonprofit survival: below the optimal level, increased spending helps decrease the likelihood of dissolution, whereas above the optimal level, increased spending increases the likelihood of dissolution.

We examine the curvilinear nature of two types of overhead costs: employee compensation spending and fundraising spending. Employee compensation in nonprofits has received growing attention in recent years. On the one hand, nonprofits need to offer competitive compensation packages to recruit, motivate, and retain high-quality employees to support organizational operations. Therefore, a reasonable level of compensation spending is necessary for nonprofits' performance and viability (Chikoto-Schultz & Neely, 2016; Selden, 2017). On the other hand, excessive compensation implies poor governance and waste (Frumkin & Keating, 2010; Garner & Harrison, 2013). The same tradeoff applies to fundraising spending. Nonprofits need to allocate resources to support fundraising activities to solicit grants and contributions (Hager, 2003). A legitimate level of fundraising spending is conducive to nonprofits, since fundraising facilitates resource flow into organizations and creates awareness of the organizations and their programs (Lee & Shon, 2018; Thornton, 2006). Excessive levels of fundraising spending, however, result in greater pressure from donors, watchdog groups, and other constituents (Chikoto-Schultz & Neely, 2016; Tinkelman & Mankaney, 2007). In sum, we posit the following:

H_1: The effect of compensation spending on the likelihood of dissolution follows a U-shaped relationship.

H_2: The effect of fundraising spending on the likelihood of dissolution follows a U-shaped relationship.

Revenue Mix

In addition to the effect of spending pattern, we examine how revenue structure affects nonprofit dissolution. Logically, each revenue source brings a unique set of benefits and risks (Froelich, 1999) and affects spending decision (Shon, Hamidullah, & McDougle, 2018).

However, a nonprofit's primary revenue source is relatively stable over time, and compared with other revenue sources, the opportunities and constraints associated with the primary revenue source may have stronger effects on a nonprofit's viability (Kim, 2017; Teasdale, Kerlin, Young, & Soh, 2013). Based on the nature of the primary revenue source, Hansmann (1980) classified organizations that derive income primarily from prices charged for their services as commercial nonprofits and organizations that receive income primarily from grants or donations as donative nonprofits.[2] In light of this, we first explore whether the primary revenue source matters to the survival of nonprofits, particularly whether commercial nonprofits have better survival prospects than non-commercial nonprofits, given the growing commercialization of the nonprofit sector in recent decades (Kerlin & Pollak, 2011; Weisbrod, 1998).

The organizational effects of nonprofits becoming business-like have been long discussed (Dart, 2004; Maier, Meyer, & Steinbereithner, 2016). As nonprofits become more reliant on commercial revenue, the inherent tension between profit means and nonprofit ends could impose a fundamental challenge to the survival of nonprofits. First, the increased attention to market discipline and the adoption of business management practices can improve organizational efficiency and capacity (Dees, 1998; Ecer, Magro, & Sarpça, 2017; Guo, 2006). Second, commercial revenue is considered more flexible and less volatile than other revenue sources, thus contributing to nonprofits' financial self-sufficiency (Carroll & Stater, 2009; Froelich, 1999). However, Foster and Bradach (2005) argued that these potential financial benefits associated with commercialization are often exaggerated, because nonprofits are usually not well prepared to handle business-like operations. More importantly, unlike donative income which brings legitimacy support for nonprofit missions (Froelich, 1999; Lu, 2016), commercial income raises the important question of goal displacement, that is, having financial goals overriding

social value. For example, commercial nonprofits may shift their service accessibility from those who need it to those who can pay for it or are easier to serve (Dart, 2004). As a result, commercial nonprofits will experience an identity crisis and lose their legitimacy to exist (Eikenberry, 2009; Kreutzer & Jäger, 2011).

The existing literature fails to reach a consensus on how the "mission-market tension" directly affects the relative viability of commercial nonprofits (Sanders, 2015). Carroll and Stater (2009) implied that commercial nonprofits experience less revenue volatility than non-commercial nonprofits. Kim (2017) argued that commercial arts nonprofits are more likely than their non-commercial counterparts to have good performance outcomes. In contrast, Hager et al. (2004) showed that commercial income does not seem to significantly affect nonprofits' likelihood of closure. Gras and Mendoza-Abarca (2014) reported that nonprofits with excessive commercial income are more likely to exit. Between the two contrasting stands of literature, it remains unsolved whether commercial nonprofits experience less risk of dissolution. Thus, we posit a non-directional hypothesis:

H_3: Commercial nonprofits have different likelihoods of dissolution from non-commercial nonprofits.

With regard to revenue mix, studies have also extensively discussed whether nonprofits should diversify their revenue sources (Hung & Hager, 2019; Lu, Lin, & Wang, 2019). On the one hand, a robust body of literature supports revenue diversification from several theoretical lenses. For example, resource dependence theory suggests when a nonprofit relies on a variety of funding sources, it minimizes the risk associated with dependence on any single source (Froelich, 1999). Organizational institutionalism theory also suggests that nonprofits with diverse funding sources are in a better position to build institutional linkages to the community and

enhance organizational legitimacy (Bielefeld, 1992). Numerous empirical studies have demonstrated the favorable effect of revenue diversification on financial stability and vulnerability (Carroll & Stater, 2009; Greenlee & Trussel, 2000; Mayer, Wang, Egginton, & Flint, 2014; Tuckman & Chang, 1991). On the other hand, scholars following transaction costs theory argue that nonprofits with diversified revenue portfolios suffer from the complexity and inefficiency of managing multiple funding relationships, which undermines the benefits of revenue diversification (Foster & Fine, 2007; Frumkin & Keating, 2011). Recent studies report that nonprofits with diversified revenue portfolios are less likely to enjoy revenue and capacity growth over time (Chikoto & Neely, 2014; von Schnurbein & Fritz, 2017).

Indeed, financial health involves multiple dimensions, and nonprofits need to balance these dimensions to remain viable (Bowman, 2011). Given the inconsistent effects of revenue diversification on financial stability and growth, the impact of revenue diversification on nonprofit dissolution is not straightforward. Within the existing literature, Bielefeld (1994) observed that dissolved nonprofits had fewer income streams than survivors. Bouchard and Rousselière (2016) reported that nonprofits combining multiple revenue sources have greater chances of survival. In contrast, Hager (2001) found that revenue diversification was useful in predicting the demise of only certain types of arts organizations. Walker and McCarthy (2010) suggested that community-based organizations with a diverse set of revenue sources are not significantly more likely to survive in the long run. We propose that financial stability may have a stronger impact on organizational dissolution than financial growth: it is possible for a nonprofit to sustain itself over time without growing its financial capacity as long as its financial condition is stable. Considering the favorable effect of revenue diversification on financial stability, we posit the following:

H_4: Nonprofits that rely on more diversified revenue portfolios are less likely to dissolve.

DATA AND EMPIRICAL STRATEGY

To test the hypotheses above, we construct a panel dataset using multiple sources. First, our primary data source is the National Center for Charitable Statistics (NCCS) – CORE file that includes basic financial information that nonprofits provide through the IRS Form 990. We focus on 501(c)(3) public charities from 2005 to 2015. Second, we match the CORE data with the list of automatically revoked organizations published by the IRS using the employer identification number (EIN), which flags revoked organizations in our sample.[3] Finally, we obtain annual economic and demographic information of the counties in which the nonprofits operate from the Bureau of Census and the Bureau of Economic Analysis.

Since the IRS automatic revocation data have not been widely used in nonprofit studies, we provide some background information about the data. The Pension Protection Act of 2006 (PPA) required all tax-exempt organizations, except for religious organizations, to file an annual information return or notice with the IRS. The law also imposed the filing requirement on small organizations that were not originally required to file for the first time in 2007. By law, an organization that fails to file any required Forms 990, 990-EZ, 990-PF, or 990-N for three consecutive years will automatically have its tax-exempt status revoked. Revoked organizations are no longer exempt from federal income tax and are ineligible to receive tax-deductible charitable contributions. An automatic revocation is effective on the original filing due date of the third annual return or notice. The IRS sends a letter informing the organization of the revocation. The IRS acknowledges that the vast majority of revoked organizations are no longer in existence, though a revoked organization may apply to reinstate its status to the date of

revocation when the organization has legitimate reasons for its failure to file with the IRS. The law set the effective data for the first wave of automatic revocations on May 2010.

Sample Building

Our initial data comprised 4,068,459 observations for 578,290 unique nonprofits in 2005-2015. For data cleaning, we first excluded nonprofits that filed with the IRS before 2005 because a new version of Form 990 was released in 2005. Second, nonprofits that had no accurate location information on file or were located outside of the 50 U.S. states and Washington, D.C. were excluded. Third, since the comprehensive filing requirement under the PPA started in 2007, we excluded nonprofits that stopped filing with the IRS before 2007 (i.e., their last appearance in the CORE data was before 2007), because we could not ascertain the reasons for their failure to file (Trussel, 2013). Also excluded from our sample were revoked organizations that were not reinstated by the IRS but that appeared occasionally in the CORE data after their revocation dates, since we could not verify the status of these organizations. Finally, following the extant research (Calabrese, 2011; Harrison & Laincz, 2008; Tinkelman & Mankaney, 2007), nonprofits with missing observations and obviously erroneous values in the variables used for empirical analysis (such as negative assets, revenue and spending, and greater revenue and spending in any financial item than total revenue and expenses, respectively) were eliminated. The final sample in Table 1 is composed of 1,407,017 observations for 272,729 individual nonprofits.

[Table 1 Here]

Variables

We consider a nonprofit dissolution as occurring when the organization started to permanently cease routine operations to serve its mission (Freeman et al., 1983).[4] In our sample, a nonprofit dissolved when it failed to file with the IRS for three consecutive years and

ultimately had its tax-exempt status automatically revoked without later reinstatement (i.e., the organization permanently disappeared in the CORE data after revocation). For nonprofits that had their tax-exempt status automatically revoked but later were reinstated and reappeared in the data, we do not consider them to be dissolved organizations.[5] By definition, for a dissolved nonprofit, the last year when the organization filed with the IRS was three years before the revocation. Therefore, the dissolution occurred two years prior to the revocation year (see Figure 1). Accordingly, the dependent variable, *organizational dissolution*, was coded as 1 when a dissolved nonprofit did not file with the IRS for the first time and 0 otherwise. In total, there are 9,663 dissolved nonprofits out of 272,729 individual nonprofits (3.5%) within our cleaned sample.

[Figure 1 Here]

Our use of auto-revocation information in measuring organizational dissolution has some advantages over other measures in previous large-scale quantitative studies (e.g., Bouchard and Rousselière (2016); Garrow (2015); Twombly (2003); Walker and McCarthy (2010)). For example, using three-year consecutive noncompliance with the filing requirement to infer organizational dissolution could be more accurate than using non-reporting in random years, since nonprofits might fail to file in one or two years for unknown reasons but remain active. Additionally, revoked organizations are allowed to respond to automatic revocation decisions and explain their reasons for their noncompliance should they still be in existence and seeking tax-exempt status. Thus, our approach may be better than the passive determination of nonprofit dissolution based on researchers' inability to locate organizations for reasons such as organization name changes, the absence of organization websites, and a lack of contact information.

Our research hypotheses focus on the effects of overhead costs and revenue mix on the probability of organizational dissolution. The first set of two independent variables examine how much a nonprofit spends on employee compensation and fundraising, each measured as a ratio to total expenses. C*ompensation spending* is obtained from Part IX Line 5(A) in Form 990, and *fundraising spending* from Part VIII Line 8b in Form 990. The second set of two independent variables examine a nonprofit's revenue structure. As discussed earlier, a *commercial nonprofit* refers to an organization that primarily draws its income from sales of goods and services (Hansmann, 1980). Following previous studies (Carroll & Stater, 2009; Garner & Harrison, 2013; Kim, 2017), we created a dummy variable coded as 1 if an organization receives more than half of its revenue from program services and 0 otherwise.[6] *Revenue diversification* was measured by the Herfindahl index based on four revenue sources: contributions, program service revenue, investment income, and other revenues.[7]

We also included three groups of control variables to account for other internal and external factors of nonprofit dissolution.[8] First, an organization's financial condition matters: organizations in better financial condition are less likely to fail (Bowman, Keating, & Hager, 2007; Carroll & Stater, 2009; Trussel, 2013). Financial condition is composed of four variables: operating margins, debt level, investment income, and total assets. *Operating margins* indicates the shares of the difference between total revenue and total expenses to total revenue (Part I in Form 990). *Debt level* is measured as the sum of bonds, mortgages and notes divided by total liabilities (Part X in Form 990). *Investment income*, its ratio to total revenue, is included as a measure of organizational slack (Part VIII Line 3A in Form 990). In addition, *total assets* are used to control for the effect of organizational size (Part X Line 16 in Form 990). *Organizational age*, calculated based on a nonprofit's ruling date from the IRS, is also included.

Second, an organization's niche characteristics affect its survival prospect (Bielefeld, 1994; Garrow, 2015; Paarlberg, An, Nesbit, Christensen, & Bullock, 2018). We thus included several county-level variables to control for the impacts of market structure and community characteristics. *Nonprofit density*, measured as the number of nonprofits (regardless of their service fields) per 10,000 residents in a county, is used to capture the competition landscape that a nonprofit confronts in its operating environment. *Income level*, the value of per capita income in $10,000, considers a county's economic condition, since nonprofits in a more resourceful environment are more likely to survive. We also included a county's population size and population structure by age, gender and race.

Third, we controlled for a nonprofit's service field following the five major NTEE categories (art and culture, education, health, human services, and others), since nonprofits in different fields may face unique operating environments (Bouchard & Rousselière, 2016; Hager et al., 2004; Harrison & Laincz, 2008).

[Tables 2 and 3 Here]

Tables 2 and 3 display the descriptive statistics for the full sample and the subsamples by service fields, respectively. Overall, the means in the subsamples are similar to the means of the full sample, and their standard deviations are similar as well. Within the full sample, dissolved nonprofits represent about 0.7% of the observations. Nonprofits report that they on average spend 5.3% and 1.7% of total expenses on compensation and fundraising, respectively, even though there are significant variations across organizations (with standard deviation being 9.9% and 6.4%, respectively). Moreover, about 57% of the observations collect more than 50% of their revenue from program service and thus are commercial nonprofits. Furthermore, within the subsamples, the rates of nonprofit dissolution in the five service fields are close to each other

with similar variations (except for health nonprofits), while the explanatory variables on financial status have much differences from each other.

Empirical Challenges and Strategies

We are interested in why a nonprofit goes to dissolution. Statistically, a unique feature of our data imposes fundamental challenges to conventional regression methods. Dissolution, the event of interest, may not yet have occurred to a substantial proportion of our sample, as shown to be the case in Table 2. Consequently, the duration to dissolution occurrence is right-censored for these nonprofits, resulting in a heavily right-skewed distribution and thus violating the assumption of normal distribution for Ordinary Least Squares (OLS) regressions. One may alternatively propose to adopt logit/probit regression model with a dummy of dissolution as the dependent variable. However, this approach is not desirable, as it ignores information about timing, assumes away time-duration, and only focuses on the dichotomous nature of the outcome (dissolution, here). In contrast to OLS and logit/probit regressions, event history analysis (EHA) utilizes the information of exposure/survival time until the last point of observation and effectively accounts for "censoring" issues (Mills, 2011). Thus, similar to Hager et al. (2004), we employ EHA to explore the amount of survival time that elapses until nonprofit dissolution occurs. Indeed, EHA is the most widespread empirical approach to examine the time that elapses until a new event of interest appears (Allison, 2004). It has been used to study the occurrence of various events such as peace/war duration, divorce, policy innovation, company bankruptcy, employee layoffs, and hospital exits (e.g., Berry and Berry (1990); Iverson and Pullman (2000); Ruef and Scott (1998)).

A fundamental concept in EHA is hazard rate, which is defined as the probability of the occurrence of an event (nonprofit dissolution) in a year, given that any dissolution has not yet

occurred in previous years. The hazard rate depends on two components. The first component is a set of covariates, including explanatory variables that might have some systematic impacts on the timing of dissolution. Parameter estimates for the set of covariates indicate how much they increase or decrease the likelihood of the event occurrence. The second component is a baseline function for the rate of the event occurrence, which considers the rate of an event occurrence only with respect to time (Box-Steffensmeier & Zorn, 2001; Buckley & Westerland, 2004). EHA makes perfect sense in a context such as this study; however, it is not without technical concerns. One of the major issues is how to parameterize the hazard rate of a baseline function, as inappropriate parametrization or a misspecification of duration dependency may bias the estimates and render the best-fitting model useless (Larsen & Vaupel, 1993). Furthermore, EHA assumes that no changes in duration dependence before a new event is observed, and a panel dataset is much concerned with the duration dependence from the time-effects across observations (Box-Steffensmeier & Jones, 2004).

To resolve this issue, we estimate the hazard rate using Cox proportional-hazards (Cox) model (Cox, 1992), which is referred to as a semi-parametric approach that parameterizes the hazard rate as a function of covariates, but does not require any restrictions on the shape of the baseline hazard function (Box-Steffensmeier & Jones, 2004; Jones & Branton, 2005). Cox model thus results in consistent effects of the explanatory covariates over time because Cox model can estimate simultaneously the effect of the factors on an event occurrence by examining how specific factors influence the rate of the event at a particular point in time (Box-Steffensmeier & Zorn, 2001). The hazard rate of Cox model for nonprofit dissolution at time *t* is estimated as follows:

$$H_i(t) = h_0(t)exp(X'\beta),$$

where $h_0(t)$ is the unspecified baseline hazard function that characterizes how the hazard function changes as a function of a survival time. The term $(X'\beta)$, indicating our explanatory covariates and their parameters, characterizes how the hazard function changes as a function of the covariates.

RESULTS

Table 4 reports the Cox model result that summarizes the impact of covariates on the risk of dissolution. Specifically, the first column presents the estimates of the linear impact of our covariates on the hazard rate of nonprofit dissolution, whereas the third column represents the estimation results of a specification that includes the curvilinear impact of overhead covariates. Corresponding hazard ratios (i.e., exponentiated coefficients) under each specification are presented in the second and fourth columns, respectively. To interpret estimation results below, a negative (positive) coefficient indicates a lower (higher) level of hazard rates than 1 or a longer (shorter) survival time, ceteris paribus.[9] Overall, most estimates present the expected signs and are statistically significant at different levels.[10]

[Table 4 Here]

First, we examine the effects of overhead costs on the risk of nonprofit dissolution. In the linear specification, neither compensation spending nor fundraising spending is found to be statistically significant at even the 10% level, which implies that the impact of overhead spending on the likelihood of nonprofit dissolution might not follow a linear pattern. We further investigate the non-linear relationship by adding the squared terms of the two overhead spending variables to the Cox model. The third column confirms that compensation spending and fundraising spending each has a curvilinear association with nonprofit dissolution: after

controlling for the same variables as in the linear model, we find that not only the coefficients of the linear terms become statistically significant, but also the coefficients of the squared terms are statistically significant under 1% significance level. This finding strongly indicates a U-shaped relationship between nonprofit dissolution and overhead costs. A nonprofit's dissolution risk will initially decrease as compensation spending grows. However, after a tipping point, any further growth in compensation spending increases the dissolution risk. The same U-shaped pattern applies to the impact of fundraising spending. In sum, a nonprofit's survival prospect is gloomy if it invests too little or too much in employee compensation or fundraising. Combining compensation spending and fundraising spending, we calculate that the turning point appears when the two overhead items together constitute 26.4% of total expenses.[11]

Second, we explore the impacts of revenue mix on a nonprofit's dissolution risk. In all columns, the findings consistently demonstrate the advantage of commercial nonprofits. For example, in the quadratic model a nonprofit with primary revenue from commercial sources (i.e., more than 50% of total revenue) is associated with a 6.24% lower hazard rate, relative to its non-commercial counterparts, and the findings are statistically significant at 1% level.[12] It implies that commercialization improves nonprofits' survival prospects. Moreover, the estimations in all columns support the revenue diversification rationale: nonprofits with more diverse revenue portfolios have a significantly lower likelihood of dissolution at the 1% statistical significance level, ceteris paribus. Combining these findings on revenue mix, our analysis suggests that primarily relying on commercial income and then diversifying the remaining revenue sources would help nonprofits reduce their dissolution risk.

Third, the findings of some control variables are worth mentioning. On the financial condition side, the results indicate that a higher level of debt will increase the probability of

dissolution, whereas operating margins seem not to statistically affect the probability. In addition, investment income has a positive and significant association with nonprofits' dissolution risk. A possible explanation is that organizations with more investment income possess more slack resources at disposal, but may they have weaker incentives for cost control and efficient operations (Bowman et al., 2007). On the organizational characteristic side, we concur with the literature on the liabilities of newness and smallness, that is, younger and smaller nonprofits (proxied by organizational age and smaller total assets, respectively) are more likely to dissolve (Freeman et al., 1983). On the environmental contexts, the findings confirm that an organization's niche characteristics can influence its survival prospect. For example, nonprofits operating in a more competitive environment with a higher degree of organizational density would experience a higher chance of dissolution. Nonprofits residing in a more resourceful environment (proxied by income level) are more likely to survive. Moreover, a county's population size seems not to affect the survival of nonprofits in the county, but the county's population structure matters.

DISCUSSION AND CONCLUSION

The nonprofit community serves social needs, promotes social change, and shapes public policy. In recent decades, the operating environment for many nonprofits has become increasingly challenging, which complicates nonprofits' operations to advance their missions. Given that organizational survival is crucial to nonprofit success and that nonprofit dissolution may produce negative economic and social consequences, a robust knowledge base on nonprofit dissolution could provide meaningful implications for nonprofit managers to formulate strategies to promote the sustainability and longevity of their organizations. A thorough review of existing

studies suggests that the literature on nonprofit dissolution has been growing in recent decades, but this research topic is still under explored and empirical findings are inconclusive. To address this intellectual gap in the extant literature, we link financial management variables to nonprofit dissolution and investigate whether a nonprofit's financial management behavior matter to its organizational survival. Our analysis demonstrates that financial factors strongly matter to nonprofit dissolution. To the best of our knowledge, this study represents the first effort to employ nationwide data to study the financial antecedents of nonprofit dissolution. Despite not accounting for all financial factors, our work does provide a basis for future empirical studies to advance this line of inquiry.

Specifically, the present study first contributes to the literature on the nonprofit overhead myth. Different from existing studies which assume a linear relationship between overhead costs and nonprofit performance, we propose that overhead costs and nonprofit dissolution are associated with each other in a nonlinear way, following a U-shaped pattern: as a nonprofit's overhead spending increases, its dissolution risk initially decreases (due to increased organizational effectiveness), but after a tipping point, further increases in overhead spending increase its dissolution risk (due to organizational inefficiency and illegitimacy). Our data provide strong support for this non-linear effect of compensation spending and fundraising spending, respectively. In sum, our work reconciles competing views on the pros and cons of overhead costs and adds new knowledge to the literature. It implies for nonprofit practitioners that the debate on *whether* overhead spending is beneficial or detrimental to nonprofits could be misplaced. The right question to ask might be *how much* overhead costs are. Our study suggests that low levels of overhead costs are as harmful as high levels. In other words, to maintain

favorable levels of survival prospects, nonprofits should strategically adopt a moderate level of overhead costs.

Second, revenue mix can affect nonprofit dissolution in two ways. On the one hand, the primary revenue source matters, as it has a deeper effect on organizational operations than other revenue sources. In this study, we particularly focus on the relative risk of dissolution for commercial nonprofits to examine how the "mission-market tension" affects their viability, since the overall trend of nonprofits seeking commercial means of financing has aroused much discussion. Although extant studies have explored the effect of commercial income on nonprofit survival (e.g., Gras and Mendoza-Abarca (2014), and Hager et al. (2004)), they do not provide a consistent answer concerning the relative risk of dissolution for commercial nonprofits. We find that nonprofits relying primarily on commercial income have a lower chance of dissolution than their non-commercial counterparts.[13] In this way, the financial benefits associated with commercialization (e.g., efficiency and self-sufficiency) seem to outweigh the potential mission and identity crisis in shaping nonprofits' fate. Indeed, commercialization itself is a complex practice and its impact on nonprofit operations is far-reaching (Dees, 1998; Young & Salamon, 2002). Our study suggests that the engagement in commercial activities and dependence on self-generated earned income can be a good financial strategy for nonprofits, at least to improve their survival prospects in turbulent environments.

On the other hand, revenue diversification also matters to nonprofit survival. Indeed, the benefits and risks of revenue diversification on nonprofits' financial health have been extensively discussed in the nonprofit finance literature. The existing literature tends to suggest that revenue diversification promotes financial stability but at the expense of financial capacity growth. However, the effect of revenue diversification on nonprofits' dissolution risk has not yet been

sufficiently studied. Our findings show that nonprofits with more diversified revenue portfolios, on average, are more likely to survive. It seems that the stabilizing effect of revenue diversification plays a more forceful role in reducing the possibility of dissolution. Nonprofit managers thus may take advantage of the positive impact of revenue diversification on the financial stability and organizational longevity.

Further, putting the findings on primary revenue source and revenue diversification together, our work shows that nonprofits that primarily rely on commercial income and diversify the remaining revenue sources enjoy better survival prospects. In other words, diversifying revenue sources without significantly relying on commercial revenue would not create the best scenario for nonprofit survival. The same problem applies when a nonprofit heavily depends on commercial income but does not diversify its other revenue sources. In fact, existing studies on revenue diversification mostly focus on *whether* diversification is good or bad to nonprofits, with less attention paid to *when* diversification is good or bad (Lu et al., 2019). In this regard, our work adds new knowledge on the efficacy of revenue diversification to the literature.

Our study suffers from a number of limitations, which means that the results should be interpreted with caution. First, as explained above, organizational dissolution does not necessarily equate to organizational failure or demise, but our data do not allow us to further delve into the reasons for dissolution. Second, we rely on the NCCS data in the analysis, but the accuracy of the data has been questioned (Froelich, Knoepfle, & Pollak, 2000; Krishnan, Yetman, & Yetman, 2006), even though we attempt to mitigate this problem as much as possible through data cleaning. Third, our results should be best understood as correlative rather than causal relationship. Although we employ several measures (e.g., using panel data and lagged explanatory variables) to better imply causality, our work is not well positioned to conduct

causal inference. Fourth, the study does not account for all organizational and financial factors that may influence nonprofit dissolution due to data limitation.

In conclusion, the study represents the first attempt to employ large-scale nationwide data to examine the financial antecedents of nonprofit dissolution over time. The findings contribute to the literature on organizational dissolution, and, more broadly, the literature on organizational management. Future studies with more nuanced data could be extremely helpful in exploring other underlying financial and managerial factors and identifying causes and consequences of nonprofit dissolution.

Notes:

1. In organizational studies, organizational dissolution has been interchangeably used with organizational bankruptcy, closure, demise, disbanding, exit, failure, and mortality (Helmig et al., 2014; Mellahi & Wilkinson, 2004).
2. Hansmann (1980) noted that not all nonprofits can fit neatly into one of these two categories, and thus donative and commercial nonprofits should be considered polar types rather than mutually exclusive ones. In the present research, we use commercial and noncommercial organizations to categories nonprofits.
3. The Automatic Revocation of Exemption List was retrieved from https://www.irs.gov/charities-non-profits/tax-exempt-organization-search-bulk-data-downloads on July 21, 2018.
4. It is important to note that nonprofit dissolution may not be equal to nonprofit failure or demise, even though they are used interchangeably in the literature (Helmig et al., 2014). Failure is the predominant reason for nonprofit dissolution, but there are alternative reasons (Fernandez, 2008; Hager et al., 2004). First, nonprofits may dissolve due to mission completion. Second, nonprofits may be merged or acquired by other nonprofits. Third, nonprofits may switch to a for-profit status.
5. In this case, we treat their financial information as missing for the years without filing (Nunnenkamp, Öhler, & Schwörer, 2013).
6. Within our sample, approximately 57.21% of the observations draw more than 50% of their revenue from program services (commercial nonprofits), approximately 42.36% of the observations draw more than 50% of their revenue from contributions and grants (donative nonprofits), and approximately 0.43% of the observations have no dominating

revenue source that accounts for over 50% of their revenue. The last two categories of organizations are non-commercial nonprofits in our study.

7. The index was calculated using $\frac{1-\sum_{i=1}^{4} r_i^2}{1-1/4}$, where r indicates the fraction of revenue generated by revenue source i. A higher value indicates a greater level of revenue diversification.
8. All monetary variables were deflated to 2010-year dollars.
9. In sum, a predictor is associated with reduced risk of dissolution if its hazard ratio is less than one, while it is associated with increased risk of dissolution if its hazard ratio is larger than one, ceteris paribus. Furthermore, a predictor does not affect the probability of dissolution when the absolute value of its hazard ratio is close to one.
10. For a robustness check, logit regression based on a panel dataset (–xtlogit–) was conducted and it provided consistent effects of our primary variables. The full results are available upon any request.
11. Since compensation spending and fundraising spending (measured in proportions of total expenses) are strongly associated with each other, calculating the turning points of the two variables separately could be biased. Thus, we conducted another Cox model that regresses nonprofit dissolution on the combined value of the two variables and the same remaining variables. Based on this Cox regression result, we manually calculated the turning point from the quadratic model (Haans, Pieters, & He, 2016).
12. Our results are robust to other thresholds in operationalizing commercial nonprofits, including 60% and 70% of total revenue.
13. Building on this finding, future research might further explore whether the dissolutions of these two types of nonprofits are affected by different sets of factors.

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Table 1. Summary of Sample Selection

Step of data cleaning	Excluded	Obs.	NPOs
Initial sample size		4,068,459	578,290
Less nonprofits filing Form 990 before 2005	65,288	4,003,171	562,885
Less nonprofits without location information or outside of U.S. states and Washington D.C.	6,811	3,996,360	561,890
Less nonprofits filing Form 990 after revocation or stopping filing Form 990 before 2007	669,743	3,326,617	529,947
Less nonprofits with missing observations and erroneous data	1,919,600	1,407,017	272,729

Table 2. Descriptive Statistics (N=1,407,017)

Variable	Measurement	Mean	S.D.	Min.	Max.
Organizational dissolution	1 when a dissolved nonprofit did not file with the IRS for the first time and 0 otherwise	0.007	0.083	0.000	1.000
Compensation spending	Compensation spending / total spending	0.053	0.099	0.000	1.000
Fundraising spending	Fundraising spending / total spending	0.017	0.064	0.000	1.000
Commercial nonprofit	1 if more than 50% of revenue from program services and 0 otherwise	0.572	0.495	0.000	1.000
Revenue diversification	Herfindahl index	0.340	0.283	0.000	1.000
Operating margins	(Total revenue – total expenses) / total revenue	-5.155	1219.978	-1027540	38792
Debt level	(Bonds + mortgages + notes) / total liabilities	0.168	0.981	0.000	908.550
Investment income	Investment income / total revenue	0.028	0.098	0.000	1.000
Total assets	Total assets in $1M	16.000	264.000	0.000	67000
Organizational age	Observation year – ruling year	22.848	17.253	0.000	115.000
Nonprofit density	Number of nonprofits / 10,000 population	6.074	4.789	0.167	75.643
Income level	Per capita income (in $10,000) in a county	45.353	17.475	12.708	184.039
Population size	Population (in 1,000) in a county	995.967	1729.423	0.627	10200
Young population	Young population (<20 years) / total population	0.258	0.032	0.079	0.462
Senior population	Senior population (>65 years) / total population	0.136	0.035	0.028	0.548
Male population	Male population / total population	0.490	0.012	0.426	0.721
White population	White population / total population	0.775	0.157	0.089	0.995
Black population	Black population / total population	0.137	0.141	0.000	0.861

Table 3. Descriptive Statistics by Service Fields

Service field	**ACH**		**Education**		**Health**		**Human Services**		**Other**	
Observations (N=1,407,017)	**155,031**		**197,100**		**217,873**		**527,213**		**309,800**	
Variables	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
Organizational dissolution	0.007	0.083	0.007	0.084	0.006	0.075	0.007	0.085	0.007	0.083
Compensation spending	0.059	0.100	0.049	0.091	0.051	0.095	0.048	0.091	0.064	0.115
Fundraising spending	0.025	0.071	0.017	0.064	0.016	0.066	0.014	0.058	0.018	0.068
Commercial nonprofit	0.612	0.000	0.474	0.000	0.457	0.000	0.539	0.000	0.753	0.000
Revenue diversification	0.504	0.268	0.343	0.269	0.294	0.269	0.318	0.278	0.325	0.288
Operating margins	-3.843	618.727	-1.840	245.619	-14.134	2742.341	-4.118	760.790	-3.372	505.688
Debt level	0.110	0.290	0.166	0.359	0.178	1.325	0.220	1.308	0.105	0.307
Investment income	0.030	0.087	0.037	0.107	0.030	0.106	0.017	0.075	0.039	0.122
Total assets (in $1million)	5.690	60.700	37.800	583.000	43.700	343.000	4.088	27.100	8.141	111.000
Organizational age	24.256	16.999	23.814	19.210	25.470	18.566	22.858	16.439	19.666	15.927
Nonprofit density (per 10K)	6.746	5.212	6.111	4.899	5.890	4.330	5.711	4.151	6.460	5.672
Income level (in $1,000)	48.662	21.844	46.509	17.614	44.613	16.404	43.802	15.661	46.123	18.239
Population (in 1,000 persons)	1078	1798	1110	1842	963	1674	923	1678	1030	1739
Ratio of young population	0.253	0.035	0.259	0.032	0.259	0.031	0.260	0.031	0.257	0.034
Ratio of senior population	0.136	0.036	0.133	0.034	0.137	0.035	0.137	0.035	0.134	0.035
Ratio of male population	0.490	0.013	0.490	0.012	0.490	0.012	0.491	0.012	0.490	0.012
Ratio of white population	0.770	0.157	0.764	0.157	0.777	0.157	0.786	0.154	0.767	0.161
Ratio of black population	0.134	0.137	0.142	0.143	0.140	0.141	0.131	0.137	0.143	0.147

Table 4. Results of Cox Proportional Hazard Ratio

MODEL	(1)		(2)	
VARIABLES	**Coef.**	**H.R**	**Coef.**	**H.R**
Compensation spending+	0.0766	1.0797	-0.8552***	0.4252
	(0.0998)	(0.1077)	(0.2066)	(0.0878)
Compensation spending+ (squared)			2.0875***	8.0649
			(0.3694)	(2.9789)
Fundraising spending+	-0.1742	0.8401	-2.0245***	0.1321
	(0.2221)	(0.1866)	(0.4451)	(0.0588)
Fundraising spending+ (squared)			3.0593***	21.3127
			(0.6125)	(13.054)
Commercial nonprofit+	-0.0707***	0.9318	-0.0624***	0.9395
	(0.0217)	(0.0202)	(0.0217)	(0.0204)
Revenue diversification+	-0.5319***	0.5875	-0.5078***	0.6018
	(0.0420)	(0.0247)	(0.0420)	(0.0253)
Operating margins+	0.0000	1.0000	0.0000	1.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Debt level+	0.0110***	1.0110	0.0109***	1.0110
	(0.0017)	(0.0017)	(0.0017)	(0.0017)
Investment income+	0.6084***	1.8375	0.5654***	1.7601
	(0.1106)	(0.2032)	(0.1113)	(0.1959)
Total assets+	-0.2910***	0.7475	-0.2869***	0.7506
	(0.0040)	(0.003)	(0.0040)	(0.003)
Organizational age	-0.0212***	0.9790	-0.0210***	0.9792
	(0.0009)	(0.0009)	(0.0009)	(0.0009)
Nonprofit density	0.0192***	1.0193	0.0194***	1.0196
	(0.0029)	(0.003)	(0.0029)	(0.003)
Income level	-0.2844***	0.7525	-0.2800***	0.7558
	(0.0522)	(0.0393)	(0.0522)	(0.0394)
Population size	0.0110	1.0110	0.0123	1.0124
	(0.0101)	(0.0102)	(0.0101)	(0.0103)
Young population	6.0131***	408.7502	6.0112***	407.9601
	(0.5755)	(235.2194)	(0.5756)	(234.8201)
Senior population	-6.6908***	0.0012	-6.6968***	0.0012
	(0.6115)	(0.0008)	(0.6114)	(0.0008)
Male population	-12.6596***	0.0000	-12.5783***	0.0000
	(1.7190)	(0.0000)	(1.7164)	(0.0000)
White population	0.2921	1.3392	0.2879	1.3336
	(0.1803)	(0.2415)	(0.1802)	(0.2403)
Black population	0.5995***	1.8212	0.6004***	1.8228
	(0.1987)	(0.362)	(0.1986)	(0.362)
Arts, culture, and humanities	-0.1152***	0.8912	-0.1158***	0.8907
	(0.0360)	(0.0321)	(0.0360)	(0.032)
Education	-0.0570*	0.9446	-0.0580*	0.9437
	(0.0314)	(0.032)	(0.0314)	(0.0297)

Health	-0.0292	0.9712	-0.0282	0.9722
	(0.0330)	(0.032)	(0.0330)	(0.032)
Other	-0.2934***	0.7457	-0.2981***	0.7422
	(0.0276)	(0.0206)	(0.0276)	(0.0205)
Observations	1,407,017		1,407,017	
Log pseudo-likelihood	-126548.06		-126519.71	
Wald chi2	11286.73***		11393.20***	

Note: Reference group for service field = Human service. + indicates the variable is one-year lagged. Statistical significances are *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Figure 1. Timeline of Nonprofit Dissolution