

Resilience in Vulnerable Small and New Social Enterprises

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Abstract: The use of financial ratios in predicting financial vulnerability has a large body of literature, but few studies address resilience and the recovery from financial distress. Further, no vulnerability studies specifically address the needs of small and young social enterprises. This study uses over twenty years of panel data to predict which factors signal the future recovery of small and young social enterprises. There is mixed support for hypotheses found in the literature, and though additional equity and revenue diversification is shown to be beneficial, increased surplus ratios carry implications which vary between financial stressors. Even in a sample of small organizations, we find evidence for the liability of smallness. Implications for practitioners, researchers, and policymakers are discussed.

Keywords: social enterprise; resilience; financial vulnerability; ratio analysis

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1. Introduction

Over the last thirty years, the social sector has become increasingly crowded. The number of corporate forms dedicated to social enterprise has boomed; further, even for established forms such as charities, the gross entry rate for new nonprofit organizations in the United States from 1989 to 2000 was 5.6 percent while the exit rate was half of that amount [1]. Competition for human and financial resources increased, as did theories on which business models were most sustainable for social economy organizations [2–11]. Further, a gap opened in the theoretical literature on the role that corporate form plays in the financial management of a social enterprise [12–20]. Since social enterprises can take any number of corporate forms, the need arose to critically examine the financial management techniques used to run traditional commercial companies and their applicability to social enterprises. Are such measures and metrics appropriate? The existence of the “double bottom line” of balancing mission and market causes not only different management goals than commercial business [21,22], but also different definitions of success [23,24] and motivations for entrepreneurship [25–27].

Consequently, a wide-ranging discussion began on how to define and predict financial vulnerability for social economy organizations [28–39]. Traditional commercial companies had used accounting ratio analysis to predict bankruptcy for almost a century [40,41], though the use of financial ratios to predict financial vulnerability in social economy organizations only extends back about 30 years [28,42]. These studies used a wide variety of data and definitions to study financial vulnerability [32,43–50], but they focused on improving the diagnostic accuracy of the vulnerability models. Unfortunately, this focus on vulnerability has limited usefulness to a manager trying to improve their vulnerable situation. Additionally, increasing a firm's chances of survival is a challenge that is often made more difficult by converging financial warning signs. This is especially true for young and small social enterprises, which may not have the human resources, institutional memory, or support networks necessary to recover from financial or economic distress [42,51].

This study will improve knowledge on the recovery and resilience of social enterprises using an established set of social economy accounting ratios; however, they are used to predict recovery rather than vulnerability. Since data on nonprofit organizations in the U.S. are comprehensive and such nonprofits can rely on mission-related earned income for 100% of their revenues, we use their mandatory financial disclosures over 20 years to develop a model of financial recovery. This study compares organizations that emerge from vulnerability to those that remain vulnerable, and we find that many (but not all) factors that influence an enterprise's vulnerability (such as equity levels and revenue diversification) are also useful in predicting social enterprise resilience and recovery.

2. Predicting Vulnerability with Financial Ratios

Financial ratio analysis was pioneered by the commercial sector decades before it entered the social economy mainstream. Beaver [41] discovered that certain characteristics could predict firm bankruptcy up to five years before failure. Shortly after, Altman (1968) and Deakin [52] expanded on this theme by broadening the number of indicators and controls. Altman [53] began with a weighted five-ratio model developed through multiple discriminant analysis, then tailored the ratios and re-specified the model to reflect different ownership and production options. Ohlson [40] was able to expand the sample size thirtyfold by employing logit estimation and utilizing audited financial statements as a data source instead of rather than relying on published information from ratings agencies. Ohlson [40] used nine indicators, but found only four were consistently significant across one- and two-year thresholds. Because declared bankruptcy is easily measured and verifiable, all of the private sector models from this period used declared bankruptcy to define financial distress.

Since ratio analysis began in the commercial sector, the initial studies of social enterprises simply transplanted the commercial ratios and underlying analysis to the social sector. At first, this practice involved markets with a mix of corporate forms, such as hospitals and universities. Cleverley and Nilsen [54] used 29 indicators to evaluate the financial health of New York State hospitals prior to closure. This analysis preceded Kennedy and Dumas [55], who found strong evidence of a liability of smallness across hospitals with different ownership types. Chabotar [50] used 12 measures of health to develop an "early warning system" in a case study of a non-profit university. Unlike the commercial literature at that time, these studies did not attempt to develop a predictive model; instead, each began to describe the public or social sector organizations using commercial concepts. A major contribution of this period was the discussion over whether the messages communicated by financial ratio analysis in a nonprofit environment are comparable to those from a commercial environment.

Despite the straightforward purpose, there are challenges to applying predictive measures for commercial companies to social enterprises [56]. First, commercial companies are easily able to compare accounting-based valuations with market-based valuations. Aside from market pricing for assets and liabilities, social enterprises (especially those with an asset lock) are not always readily able to estimate the market capitalization of their business. Concepts of earnings per share do not apply to nonprofit organizations, and while EBIT (earnings before interest and taxes) estimates and retained earnings are possible to calculate, they do not mirror the context of the corporate sector [57]. Second, though corollaries exist in the social sector for these missing estimators, the social sector has unique financial concerns such as fundraising expenses and revenue type diversification that need to be accounted for when measuring financial health.

Third, unlike the formal declaration of bankruptcy that signals the demise of a commercial entity, such an act would be unusual for many social enterprises depending on the legal and cultural context. Commercial pioneers were able to build predictive models based on declared failures, while the definition of failure or "financial vulnerability" for social enterprises was subject to debate. In the United States, nonprofits can be

disbanded or involuntarily stripped of 501(c)3 status if they fail to file mandated regulatory documents, fail to pay taxes or fines, or do not notify the state regarding changes in registered agents. Poor management from a nonprofit's board or staff, judicial action, inactivity, or excessive liabilities can lead to an organization being disbanded [31,58]. Voluntary closure of nonprofits can occur due to financial concerns, board dissonance or impropriety, and other governance issues [31,59]. However, the constrained distribution of assets in the case of the dissolution of a charity influences any financial indicator that would assume a degree of liquidity in asset valuation. In short, even the act of organizational demise differs significantly between traditional and social economy organizations due to the liquidity of assets and whether those assets must be donated to other social enterprises. Organizational closure can cost creditors access to such assets, and managers must compensate creditors for such risk accordingly.

Finally, the translation of ratio analysis from for-profit to nonprofit was incomplete because it did not reflect several elements unique to the social context. First, the primary motivator behind a social enterprise is the accomplishment of mission rather than solely the achievement of commercial gains [60,61]. This meant that while targeting ratios in commercial organizations might entirely capture managerial objectives for profit maximization, they would not in a social organization [62]. Further, the calamity being avoided was service disruption rather than bankruptcy; though these concepts can be related (bankrupt enterprises do not deliver services well), the financial aspect is an intermediary to the problem of service disruption. This is echoed by scholars such as Naseem et al. [63], who posit that accounting ratios play a moderating role at best between CSR disclosure and firm value for traditional companies. At the least, the set of ratios used in predictive analysis should echo conditions found in the social enterprise sector, including measurements such as revenue diversification or volunteer involvement [64]. As the management objectives begin to shift, the composition, meaning, and utility of ratio analysis should alter to match the evolving objectives.

3. Financial Ratio Analysis in Social Enterprises

In 1991, Tuckman and Chang proposed that, rather than a prediction of bankruptcy, a nonprofit needed a way to predict possible interruptions in service delivery. Tuckman and Chang [28] analyzed four financial ratios that were potentially able to forecast nonprofit services disruption: equity balances, revenue concentration, administrative expenses, and operating margins. Tuckman and Chang then sort the nonprofits that filed 990 financial information forms in 1983 (4730 firms in their sample) with at least one of the ratios in the bottom quintile as "at-risk," and with all ratios in the bottom quintile as "severely-at-risk." Their descriptive cross-sectional analysis is considered the seminal work in the field of social enterprise financial indicator analysis [28].

In the years following Tuckman and Chang's [28] study, there have been numerous goals, definitions, and statistical methods used when employing financial ratios among social enterprises [42,51,54–56,59,63,65–70]. Building on the foundation of his early demise work, Hager [32] redirected attention to the prediction of an organization's actual demise rather than predicting overall organizational vulnerability. Using a nonprofit's failure to file mandatory 990 forms for four years as a proxy for firm death, Hager found that all four of the Tuckman-Chang measures predicted demise of arts organizations, though by varying degrees. Greenlee and Trussel [31] conducted an empirical test of Tuckman and Chang's measures against a different definition of financial distress. In their study, Greenlee and Trussel defined vulnerability as a decrease in the ratio of program expenditures to revenue over a span of three years. Here, vulnerability refers to the likelihood a program will undergo disruption rather than trying to proxy closure. Logistic regression showed three of Tuckman and Chang's four ratios were particularly noteworthy. In 2004, Trussel and Greenlee added size and subsector as control variables and defined "vulnerability" as any organization having a substantial decrease in assets between 1992 and 1995. They found the equity ratio, surplus margin, and firm size sig-

nificant, and they used the results to create a financial rating system for nonprofit firms. In a change from logistic regression, Ritchie and Kolodinsky used factor analysis on 122 university foundations to determine which 15 possible indicators were useful in evaluating nonprofit financial performance [47].

Keating et al. [34] used discrete hazard rate functions to test the models of Ohlson, Altman, and Tuckman and Chang. Utilizing data from the NCCS digitized files in 1999 and 2000, the authors estimated the models using four different definitions of financial distress: a one-year decrease in solvency level, net assets, total revenues, or program expenses. The Ohlson [40] model had the most predictive power in their study, which they then improved by adding ratios capturing commercial revenues and endowment performance. Their final custom model had the most predictive power for the sample. Almost a decade later, Tevel et al. [38] tested many of the same models, but also included models built on practitioner organizations such as UK New Philanthropy Capital and the Israeli Midot. Despite the new models, Tevel et al. [38] found that the original Tuckman and Chang [28] ratios had the most predictive power compared to practitioner models.

In more recent literature, studies have focused on the roles of specific indicators and their correlations with firm types and performance. Hodge and Piccolo [33] use the Trussel [37] model to evaluate the impact of revenue source in social service nonprofits, holding board structure and organizational characteristics constant. Abraham [49] takes this further and highlights the role an organization's mission plays in constructing and employing financial ratio analysis. There is robust literature dedicated to the roles and definitions of particular organizational health indicators—particularly in the areas of overhead costs [46,68,71–73] and revenue concentration [70,74–77]. Of special note, Coupet and Berrett [68] argue that the common conceptualization of the overhead ratio as an efficiency measure is an ill fit and argue for a more holistic measure.

Significant recent work has also involved testing accounting ratio analysis in charities outside of the U.S. context. For example, Dayson [30] provided a description of the issues facing nonprofit vulnerability research in the United Kingdom. Fernandez explored the reasons underpinning nonprofit demise in Spain [78], while Montrone et al. [79] examined Italian social cooperative closure [79]. Kruse [80] avoided the issues in comparing accounting and organizational form differences across borders by relying on self-reported conceptualizations of entrepreneurs rather than accounting ratios to compare U.K and Indian social enterprises. However, partially due to the wide variety of for-profit social enterprise forms that complicates comparative research, there is far less research available regarding financial distress for non-charities that are active in the social sector than there are for charities.

4. Hypotheses Development

This study builds upon the Tuckman and Chang [28] indicators to explore social enterprise financial recovery rather than demise. Since we are interested in how existing vulnerability tools perform as instruments of recovery, the set of hypotheses tested here are the same ones used in the Trussel [37] study. Further, Trussel (2002) faced the same data constraints in using the Core files, necessitating the removal of the administrative cost ratio due to a lack of data.

The equity ratio refers to an organization's total net assets versus its revenues. A significant proportion of total net assets reflects uncommitted assets, which can be liquidated in order to fuel recovery. Trussel [37] predicted and found a negative relationship between equity and financial vulnerability. Accordingly, we expect a positive relationship between larger proportions of equity to revenue and a social enterprise's ability to recover from financial distress. If this were so, it would suggest that organizations that recovered did not do so by taking on debt, which would depress the equity ratio (assuming the cash would immediately be spent). As a note, there are differences in formula between the Trussel (2002) and the equity ratio in this study, which is why the "predicted

sign" contained in his paper is positive, despite denoting a positive relationship between low levels of equity and vulnerability.

Hypothesis 1 (H1). *Higher levels of equity will positively influence financial recovery in young and new social enterprise organizations.*

The surplus margin is a measure of both business model viability and of liquidity. Current literature is divided over whether surpluses positively or negatively impact a social enterprise [2,81,82]; this is primarily due to the normative pressure to minimize annual surplus due to the assumption that it is either a traditional company masquerading as a social enterprise or that any surplus is effectively robbing the organization of making further social impact. However, since we are interested primarily in small and young social enterprises, we do not expect that any will have entered the market with enough of an operating margin to draw rebuke. Therefore, we expect a positive relationship between what is likely a lower and more normatively acceptable rate of annual surplus and social enterprise recovery.

Hypothesis 2 (H2). *Organizations with a high surplus rate will positively influence financial recovery.*

Unlike most commercial organizations, nonprofit social enterprises often employ many different revenue types (such as earned income, individual donations, grants, etc.). If the social enterprise suffered an interruption of one of these funding sources, such as the expiration of a contract, then its recovery depends on revenue from other funding types. Trussel [37] expected to see a positive relationship between the higher levels of revenue concentration and vulnerability. We predict that having a more diverse revenue portfolio will promote recovery. If an organization relies on multiple funding sources, then it is more likely to adapt to the resources available in their environment and recover financially.

Hypothesis 3 (H3). *A more diverse revenue mix will promote financial recovery.*

Even though the sample is limited to social enterprises that had total revenues of \$150,000 or less during the year of vulnerability, we still expect to find a liability of smallness. In other words, larger organizations will be less likely to be vulnerable and will have a corresponding advantage in achieving financial recovery.

Hypothesis 4 (H4) *Larger social enterprises will be more likely to recover than similar smaller social enterprises.*

We also expect older and more established organizations will have an advantage in recovering financially, even in a sample limited to organizations less than or equal to ten years old. The networks and internal systems which Stinchcombe [83] described as lacking and contributing to the liability of newness will have an increasing number of years to develop. This means that the human resource expertise and external networks will have had (slightly) more time to develop and offer further support against vulnerability.

Hypothesis 5 (H5). *Older social enterprises will be more likely to recover than similar younger social enterprises.*

5. Materials and Methods

5.1. Data Source

The National Center for Charitable Statistics (NCCS) assembled and maintained numerous databases based on the Form 990 and related tax forms that are required for U.S. nonprofit social enterprises by the Internal Revenue Service (IRS). This paper uses the Core data files, which contain fields from 990 forms filed between 1990 and 2012 for public charities registered as 501(c)3's making more than \$25,000 per year. The cleaning of the data prior to the construction of the two samples is described in Table 1.

Table 1. Summary of data cleaning.

Beginning Sample of Nonprofit Observations	5,500,342	(% of Original)
less nonprofit observations with fiscal years prior to 1987	−5	~
less nonprofit observations with missing rule dates	−39,867	0.72%
less nonprofit observations with incorrect rule dates	−62,333	1.13%
less nonprofit observations with ages less than −1 ¹	−26,575	0.48%
less nonprofit observations that were exact duplicates on employer identification number (EIN), fiscal year, and total revenues	−767,966	13.96%
less nonprofit observations that were exact duplicates on EIN and fiscal year ²	−21,109	0.38%
less organizations with negative values for contributions, program revenues, or dues	−3170	0.06%
less nonprofits which did not report a sector	−2	~
Potential sample size after cleaning	4,579,315	83.26%
Nonprofits from final potential sample with two years of insolvency followed by two years of filing a 990	91,226	1.66% ³
Nonprofits from final potential sample with two years of 25% decrease in total net assets followed by two years of filing a 990	146,446	2.66%

¹ Since nonprofits can retroactively apply tax-exempt status for a year while their status ruling is pending, an operating age of −1 is possible since age is the difference of the fiscal year and the date exemption was granted. ² Observations matching on only EIN and fiscal year are less likely to be duplicate filings than those matching on EIN, fiscal year, and total revenues; however, it is still likely enough to be removed from the data set. The steps are kept separate to tranche the likelihood of duplication. ³ There are two sources of restriction here. First is the requirement that four consecutive years of data exists, which was problematic even before almost 14% of the data set was marked as missing. The second is the restriction of meeting the sample conditions needed for insolvency and financial disruption.

Such accessibility and detail, however, comes with drawbacks. Many organizations with total annual revenues under \$25,000 (the financial baseline for filing) did still file with the IRS, though they were not required to do so; further, churches and other houses of worship are not required to file. In addition, the forms do contain inaccuracies and discrepancies. Entries regarding financial activities that nonprofit social enterprises consider unimportant or uncomfortable, such as non-mission revenues and fundraising expenses, are particularly suspect [84]. However, as noted in Froelich, Knoepfle, and Pollak [84], the Form 990 filings are adequate for research purposes, with high degrees of consistency between audited financial statements and the information in the 990 forms for balance sheet items.

5.2. Sample Selection

This study specifically investigates the impact of firm traits on the financial recovery of young and small nonprofit social enterprises, thereby filling a gap in the social enterprise literature. We consider “young” to be social enterprises that, on their first year of vulnerability, are no older than seven years. This study considers “small” to be social enterprises with inflation-adjusted total revenues under \$150,000 during any of the four

consecutive years of vulnerability and potential recovery, with inflation adjustments using a base year of 2012.

There are two different potential samples, each comprised of nonprofit social enterprise firms that meet one of two different definitions of vulnerable. The first is a classic measure of net worth—the condition of “balance sheet” insolvency, where total liabilities are greater than total assets. The second type of vulnerability is probable financial disruption, which was employed in the Trussel and Greenlee [85] and Keating et al. [34] papers. We define this as a 25 percent decrease in annual total net assets over two years. Because our study uses a sample of organizations attempting to recover, we only use one year of insolvency or probably financial disruption to classify a social enterprise as vulnerable. Requiring multiple years to prove vulnerability for inclusion in the sample would be similar to asking Trussel and Greenlee to prove three years of health for a nonprofit before including it in their predictive vulnerability model.

The “solvency” sample consists of nonprofit social enterprises who have been insolvent for at least two years, then filed 990 tax forms for an additional two years after that. Likewise, the “financial disruption” sample contains nonprofit social enterprises that experienced a 25 percent annual loss in total net assets for two years as reported by the difference of beginning and end of year total net assets, then filed 990 tax forms for an additional two years. Though this provides the information required for our analysis, it also excludes organizations that were in poor enough financial health that they did not report. Unfortunately, these organizations are not separable from the normal response inconsistency in filing Form 990s. Therefore, it is important to remember that this is not a determination of how social enterprises should avoid demise, but rather how they differentiate themselves from organizations that remain vulnerable. Tables 2 and 3 show the steps from the completion of data cleaning to the two final samples.

Table 2. Sample selection for the solvency sample.

Nonprofits from final potential sample with two years of insolvency followed by two years of filing a 990 form	91,226
Less observations from nonprofits older than 10 in their diagnosis year	59,495
Less observations from nonprofits whose total revenues were consistently >\$150,000 during the observation period	21,519
Final sample for Solvency	
Total Observations	10,212
Number of Unique Nonprofits	5386

Table 3. Sample selection for the sinancial stability sample.

Nonprofits from final potential sample with two years of insolvency followed by two years of filing a 990 form	146,446
Less observations from nonprofits older than 10 in their diagnosis year	87,241
Less observations from nonprofits whose total revenues were consistently >\$150,000 during the observation period	30,459
Final sample for Financial Stability	
Total Observations	28,746
Number of Unique Nonprofits	21,175

5.3. Dependent Variables

Using two definitions of vulnerability permits us two dependent variables to gauge financial recovery. For the first sample, solvency will be determined by a nonprofit social enterprise having two consecutive years of total assets being equal to, or higher than, total liabilities following a two-year period of insolvency. For example, an organization that was insolvent in both 2004 and 2005 will need to be solvent in 2006 and 2007 to be considered recovered in the solvency sample. Similarly, after two consecutive years of at

a least 25 percent annual decrease in total net assets, an organization will need to have two consecutive years of either net asset growth or losses less than 25 percent to be considered financially recovered under the financial stability sample.

5.4. Independent Variables

As mentioned previously, the independent variables closely approximate those used by Tuckman and Chang [28] that are standard for the field. Other firm characteristics are selected based on their inclusion in the Hager [32] or Trussel [37] models. The Trussel model contains the original four Tuckman-Chang measure plus a size measure and sector dummies, but data for the administrative cost ratio is unavailable. Details on the formula and NCCS Core Data fields used to construct each measure are displayed in Table 4. When used in the denominator or in taking the natural log, revenues below \$1 are rounded up to \$1 for simplicity.

In this study, the equity ratio is defined as the difference between total end-of-year assets and total end-of-year liabilities (which is total net assets), normalized by total revenues. We estimate financial surplus by normalizing net income by total revenues. As described earlier, evidence suggests that social enterprises accumulate surpluses, though the implications of such are under debate [57,86].

Table 4. Variable operationalization.

Name	Formula	NCCS Core Data Fields
Equity ¹	$\frac{\text{Total Net Assets}}{\text{Total Revenues}}$	$\frac{FUNDBAL}{TOTREV}$
Surplus	$\frac{(\text{Total Revenues} - \text{Total Expenses})}{\text{Total Revenues}}$	$\frac{(TOTREV - EXPS)}{TOTREV}$
HHI ²	$\sum \left(\frac{\text{Total per Revenue Type}}{\text{Total Revenues}} \right)^2$	$\sum \left(\frac{REVENUE\ TYPE}{TOTREV} \right)^2$
Size ³	Natural log of total revenues	$\log(TOTREV)$
Age ⁴	Years since receipt of tax-exempt status	$FISYR - RULEDATE$

¹ Both the equity and surplus ratios have been winsorized. ² The revenue types used are CONT (direct public support + indirect public support + government contributions and grants), PROGREV (program service revenues), DUES (dues), INVINC (investment income + savings income + securities income), NETRENT (net rental income), SALESECN (net sale of securities), SALEOTHN (net sale of other assets), FUNDINC (net special event proceeds), GRPROF (net inventory sales) and OTHINC (other revenues). ³ The total revenue has been adjusted for inflation prior to taking the natural log. ⁴ Some organizations appear to have lost and regained their exemption status during the sample, which causes nonlinear age. To correct for this, the age for three years prior was calculated as a base year, then ages for years since then have been the base year plus the time elapsed since that year. For example, the social enterprise's current age will be the fiscal date three years ago minus the date of exemption reported three years ago, plus three years. Importantly, this catches older and more established organizations who have regained their exemption and kept their information out of the sample.

To gauge revenue concentration, we use a Hirschman-Herfindahl concentration index, which is the sum of the squares of each revenue source's proportion of total revenue (HHI). Due to the detailed nature of the data, we are able to include 10 possible revenue sources. Notably, this sum is not the total revenue amount provided by the 990. Rather, it is the sum of the revenues used in the study to account for errors or potential mismatches in the data due to cleaning. The more potential revenue streams included in the calculation of HHI, the more detail is picked up in the model [87]. The size factor is a logged form of total assets. Sector dummies are included, though we have expanded the number of sectors from the 10 in Trussel (2002) to sixteen. Since we use twenty years of panel data, we also include year dummies to capture time-related variance. Summary statistics for the solvency and financial stability estimations are shown in Tables 5 and 6.

Table 5. Summary statistics for the small and young solvency estimation.

	Variable	Year 1		Year 2	
		Mean	Std. Dev.	Mean	Std. Dev.
Achieved Solvency ¹ (N = 1659)	Equity	−0.326	(0.946)	−0.247	(1.129)
	Surplus	−0.249	(0.660)	−0.048	(0.470)
	HHI	0.806	(0.210)	0.800	(0.214)
	Size	11.355	(1.479)	11.603	(1.239)
	Age	2.700	(2.319)	3.700	(2.319)
Did Not Achieve Solvency (N = 8553)	Equity	−0.628	(0.573)	−0.681	(0.577)
	Surplus	−0.317	(0.794)	−0.210	(0.671)
	HHI	0.823	(0.203)	0.819	(0.204)
	Size	10.992	(2.497)	11.128	(2.464)
	Age	3.528	(2.342)	4.528	(2.342)

¹ “Achieved Solvency” means that the social enterprise, following two consecutive years of total liabilities exceeding total assets, had two consecutive years where total assets either equaled or exceeded total liabilities. “Did Not Achieve Solvency” means that the social enterprise, following two consecutive years of total liabilities exceeding total assets, did not have two consecutive years where total assets either equaled or exceeded total liabilities.

Table 6. Summary statistics for the small and young stability estimation.

	Variable	Year 1		Year 2	
		Mean	Std. Dev.	Mean	Std. Dev.
Achieved Stability ¹ (N = 11,929)	Equity	0.772	(3.578)	0.753	(4.609)
	Surplus	−0.020	(0.606)	−0.301	(0.652)
	HHI	0.800	(0.214)	0.794	(0.216)
	Size	11.291	(1.182)	11.171	(1.481)
	Age	2.554	(2.410)	3.554	(2.406)
Did Not Achieve Stability (N = 16,817)	Equity	0.306	(3.535)	0.099	(3.489)
	Surplus	−0.163	(0.728)	−0.315	(0.693)
	HHI	0.823	(0.205)	0.819	(0.205)
	Size	11.192	(1.982)	11.172	(2.055)
	Age	3.006	(2.422)	4.006	(2.422)

¹ “Achieved Stability” means that a social enterprise, following two consecutive years of at a least 25% annual decrease in total net assets, had two consecutive years of either net asset growth or losses less than 25%. “Did Not Achieve Stability” means that a social enterprise, following two years of at a least 25% annual decrease in total net assets, did not have either net asset growth or losses less than 25% for two consecutive years.

Pearson correlation coefficients and their significance are shown in Tables 7 and 8. As is common in financial research, there are correlations between many variables [88].

Table 7. Pearson correlations for the small and young solvency estimation.

	Variable	Equity	Surplus	HHI	Size	Age
Solvency Year 1	Solvency	0.169 *	0.033 *	−0.030 *	0.057 *	−0.130 *
	Equity	1				
	Surplus	0.310 *	1			
	HHI	−0.039 *	−0.027 *	1		
	Size	0.318 *	0.066 *	−0.056 *	1	
	Age	−0.099 *	0.091 *	−0.028 *	−0.011	1
Solvency Year 2	Solvency	0.224 *	0.093 *	−0.033 *	0.076 *	−0.130 *
	Equity	1				
	Surplus	0.262 *	1			
	HHI	−0.031 *	−0.013	1		
	Size	0.251 *	0.017	−0.037 *	1	
	Age	−0.140 *	−0.003	−0.017	−0.079 *	1

* $p < 0.05$.

Table 8. Pearson correlations for the small and young stability estimation.

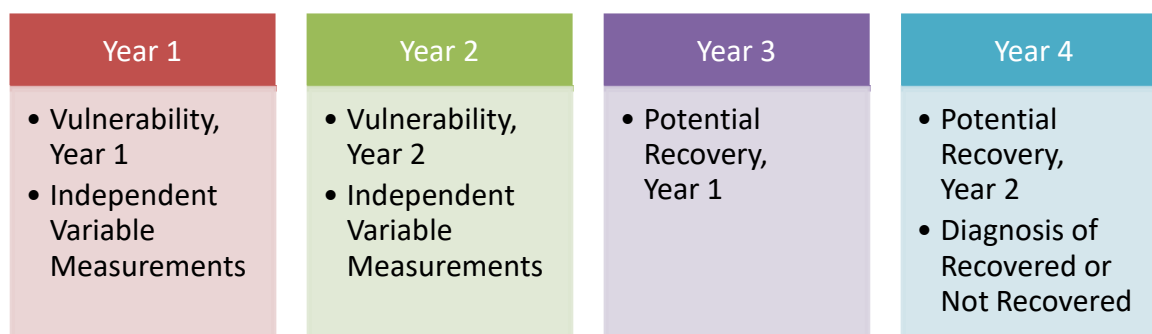
	Variable	Equity	Surplus	HHI	Size	Age
Stability Year 1	Stability	0.064 *	0.103 *	-0.054 *	0.029 *	0.092 *
	Equity	1				
	Surplus	-0.225 *	1			
	HHI	-0.007	0.031 *	1		
	Size	-0.362 *	0.186 *	-0.002	1	
	Age	-0.002	-0.129 *	-0.047 *	-0.039 *	1
Stability Year 2	Stability	0.080 *	0.010	-0.59 *	-0.001	-0.092 *
	Equity	1				
	Surplus	-0.395 *	1			
	HHI	0.000	0.024 *	1		
	Size	-0.450 *	0.247 *	-0.003	1	
	Age	-0.024 *	0.012	-0.014 *	-0.060 *	1

* $p < 0.05$.

First, collinearity from standardization does not appear to affect our findings. There is sizable correlation between the Equity and Surplus Ratios, and between the Equity Ratio and Size, but no sizable correlation between the Surplus Ratio and Size. Second, the Size variable has some correlation issues, but sensitivity tests using total assets yield similar issues. Finally, these correlations roughly match those found by landmark vulnerability studies. Trussel [37] finds that all of his covariates have significant Pearson correlations, with the Debt Ratio to Surplus Margin correlation at -0.252 and the Debt Ratio to Revenue Concentration at 0.207 . Hager [32] finds even higher coefficients in some subgroups of arts organizations, with correlation coefficients between Operating Margin and the Equity Balance reaching as large as -0.78 . Though we should be mindful of the correlations here, these findings should be considered on par with those of similar studies from the field.

5.5. Model Specification

Since the Core data are available over a long period of time, we can employ unique panel data structures in our study. Though studies such as Trussel [37] and Hager [32] have used the Core data before, both studies based their measures on a single year (or a small group of years). By utilizing panel data, we can greatly expand and enhance the analysis. This involves a model that contains information for a single instance of potential recovery taking place over a period of four years (see Figure 1).

**Figure 1.** Recovery Model Variable Construction.

Many different estimation models are used across the financial ratio analysis literature. We believe two separate logistic (logit) analyses (one for the impact of the independent variables in each year) are appropriate here. For the logistic analysis, let $P(i,t)$ represent the probability that social enterprise firm i will have recovered from their di-

agnosis of financial vulnerability at time t . The vector of firm characteristics is $x(i,t)$ and the vector of parameters which form coefficients on those traits is β [85,89]:

$$P(i,t) = \frac{1}{1 + e^{-\beta x(i,t)}}$$

where the vector of independent variables are related to the dependent variable using specific time values for characteristics in the first year of vulnerability (a) and those in the second year of vulnerability (b) as shown

$$(a) \text{ Recovery}_{i,t+3} = \text{EQUITY}_{i,t} + \text{SURPLUS}_{i,t} + \text{HHI}_{i,t} + \text{SIZE}_{i,t} + \text{AGE}_{i,t} + \text{SECTOR}_i + \text{YEAR}_t$$

6. Results

We present the empirical findings by variable, examining resilience to both definitions of vulnerability. Summary statistics for all variables of interest and full regression results are available from the author. As a reminder, the time periods are pooled, so Year 1 reflects the first year of the organization's insolvency, whether that is 1991,2001, or any other year. Table 9 contains the average marginal effects for the primary independent variables. The graphs of the predictive margins for each variable show the sample average of the predicted recovery probability according to that variable's average marginal effect.

Table 9. Predictors of social enterprise financial recovery for young and small social enterprises, average marginal effects for primary independent variables.

Variable	Insolvency Recovery		Disruption Recovery	
	Year 1	Year 2	Year 1	Year 2
Equity Ratio	0.138 *** (0.015)	0.202 *** (0.019)	0.014 *** (0.001)	0.014 *** (0.001)
Surplus Ratio	-0.018 ** (0.007)	0.004 (0.013)	0.087 *** (0.006)	0.045 *** (0.006)
Revenue Concentration (HHI)	-0.037 ** (0.018)	-0.045 ** (0.018)	-0.136 *** (0.015)	-0.139 *** (0.015)
Size	-0.003 (0.002)	-0.005 (0.003)	0.012 *** (0.002)	0.007 *** (0.002)
Age	-0.015 *** (0.002)	-0.012 *** (0.002)	-0.014 *** (0.001)	-0.016 *** (0.001)
Observations	10,212	10,212	28,746	28,746
Log Pseudolikelihood	-4195	-4008	-18849	-18962
McFadden's R-squared	0.074	0.115	0.034	0.028
Adj. Count R-squared	0.001	0.001	0.037	0.031
Sensitivity	0.60%	1.51%	25.64%	22.50%
Specificity	99.89%	99.72%	84.41%	86.25%
% Correctly Classified	83.76%	83.76%	60.02%	59.79%

Robust standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$. Base Sector: Other Supporting Public Benefit; Base Year: 1991; Robust Errors are Clustered on EIN).

6.1. Equity Ratio

Solvency. According to Table 9, a 10 percent rise in the equity ratio in Year 1 raises the probability of recovery by 1.4 percentage points; in Year 2, it is even higher at 2 percentage points.

To illustrate practical significance, let us assume there is a social enterprise that has the first-year median values of assets (\$48,341), liabilities (\$130,353), and total revenues (\$66,641). This would give our social enterprise total net assets of -\$82,012 and an equity ratio of -1.234. Ten percent of this is -0.1234, which when combined with the original equity ratio gives a total of -1.1106. The total net assets need to increase by \$8,200.47 to -\$73,811. Therefore, a social enterprise similar to the first in all ways except for having

−\$73,811 in net assets (compared to −\$82,012) has a 1.4 percentage point higher chance of becoming solvent than the original social enterprise. This can be verified using predicted probabilities for the point values at an equity ratio of −1.234 (Pr = 0.0805) and an equity ratio of −1.111 (Pr = 0.0907).

Stability. A firm's likelihood of financially stabilizing is also impacted by the equity ratio (though its effect is more muted than in the case of solvency). The marginal effect of the equity ratio is relatively small, predicting only a 0.14 percentage point increase in the probability of stabilization for a 10 percent higher equity ratio than the first year (shown in Table 9).

6.2. Surplus Ratio

Solvency. When we look at the marginal effects reported in Table 9, we find an unexpected negative relationship between increasing net income per dollar of revenues, and eventual solvency, but this becomes insignificant during the second year of vulnerability. A 10 percent rise in the surplus ratio during the first year decreases the probability of becoming solvent by 0.2 percentage points. This may not seem like an especially significant increase, but the likelihood of recovery is lower for solvency than for stability.

Stability. The marginal effects from Table 9 show a positive predictive relationship between the surplus ratio and the probability of achieving stability (that ratio is half the magnitude during Year 2 as it is during Year 1). In the first year, a 10 percent rise in the surplus ratio increases the probability of becoming financially stable by 0.87 percentage points, decreasing to 0.45 percentage points for a similar rise in the equity ratio of Year 2.

6.3. Revenue Diversification

Solvency. Revenue concentration here is measured by the Hirschman-Hirfindahl Index (HHI), a measure that trends to one if only one type of resource is used but approaches zero as the number of revenue types increases. Since the nonprofit social enterprises in this study were very small and young, it should not be surprising that the low amounts of revenue come from a limited variety of sources.

Statistical evidence shows that revenue diversification is a good thing in recovery. As seen in Table 9, there are significant negative coefficients on both years in the solvency model. This indicates that increased concentration in a revenue portfolio decreases the probability of a social enterprise becoming solvent. A 10 percent increase in revenue concentration the first year decreases the probability of recovering by 0.4 percentage points. Using the median value for the first year of solvency (0.90), this would mean that a 10 percent increase would bring the value to 0.99, which is essentially a single source. This would decrease the probability of becoming solvent from 13.62 percent to 13.32 percent, which is somewhat negligible (though statistically significant). We see a similar slope for the marginal effects between Years 1 and 2, though Table 9 has evidence of a slightly larger impact for Year 2.

Stability. The impact of revenue concentration in the stability model is three times the magnitude of the impact in the solvency model. When an organization tries to achieve financial stability from financial distress, the impact of another 10 percent in HHI predicts a 1.36 percentage point drop in the possibility of recovery. A very steep and negative estimated marginal slope is evident, indicating that though there are fewer organizations with diversified portfolios, their diversification is very helpful in stabilizing their revenue stream. This is in accordance with the vulnerability literature.

6.4. Size

Solvency. Since there is already a severe size restriction on the sample (focusing on the small), there was not much heterogeneity in size. The median total revenue in the first year is \$95,225 for those who would become solvent ($\exp(11.464) = 95,225$), and \$94,183

for those who will remain insolvent ($\exp(11.453) = 94,183$). Size is not significant for either of the years in the solvency model.

Stability. Unlike in the solvency model, Table 9 shows the size of the enterprise playing a positive and significant role in predicting financial stability when all other factors held constant. This finding contradicts what one would expect by looking at the descriptive statistics and emphasizes the importance of regression analysis. This impact is more pronounced during the first year, with otherwise identical organizations that are 10 percent larger having an additional 0.12 percentage points toward the probability of stabilizing (compared to 0.07 percentage points for the second year). Since the mean size in the first year for those that stabilize is \$82,290, this means that an increase of 1 percent in logged total revenues (about \$9845 here) would increase the likelihood of stabilization by only 0.12 percentage points.

6.5. Age

Solvency. Contrary to popular belief, we find that older social enterprises face a small (yet significant) disadvantage. Table 9 suggests a negative marginal impact on the probability of recovery by 0.02 percentage points for each additional year of age in the first year. The impact decreases for the second year, with a marginal effect of -0.012 . This is evident when comparing the intercept at seven years for both years. We suspect this interpretation of the marginal effect may be understating the effect compared to other variables, which are all continuous. However, a 1% change in age does not make sense).

Stability. The marginal effect of age for stability is almost identical to the marginal effect for solvency: -0.014 for the first year and -0.016 for the second. Though statistically significant, this is not especially useful. The predictive impact is small compared to other financial indicators, and age is not controllable by management. Thus, even if age was impactful, there would be little an organization could do to address that impact.

6.6. Control Variables

In terms of controls, the year dummies are almost universally insignificant. The only exception is a minor positive impact for 1992 as compared to the previous year in recovery based on the first year of disruption. The subsector results are generally insignificant when compared to the base group of “Other Supporting Public Benefit” organizations, though there are exceptions. In the Solvency sample, only the Human Services subsector had significantly less likelihood of recovering compared to the base group. In the stability sample, the Arts, Health, Human Services, International, Public Benefit, and Religious subsectors were all less likely to recover than the base group.

7. Robustness Tests

We test the specifications in two ways. For the first, we examine what appears to be a nonlinear relationship with age by including an age quadratic. Second, we address concerns of multicollinearity by shifting the choice of the size variable away from total revenues (which also serves as a standardization variable) to total assets.

7.1. Robustness 1: Age Quadratic

Our findings did not show a liability of newness in recovering from financial vulnerability in small and young social enterprises. There have been suggestions in the literature of a liability of adolescence [90,91], where organizations have a honeymoon period after founding as they spend their original start-up capital, but then face potential calamity once that initial capital has been spent. We wanted to make sure that a nonlinear relationship was not hiding in the data. Accordingly, quadratic age terms were added to both models to capture nonlinear effects.

As seen in Table 10, there was little support for a nonlinear effect of age. The exception is in the slight U-shaped curve, which marks the importance of age in the second

year of recovering from financial disruption. This signifies that the likelihood of recovery decreases as the social enterprise ages until they reach 9.6 years old (found using the 2b/a formula). They increase from that point onward, which supports the liability of adolescence argument. This is also a reason why further exploration of a potential nonlinear relationship with age is best left for future research—the inflection point is on the upper bound of this study’s sample. All quadratic models were considered inferior to-models without quadratics by standards of fit (see Table 11).

Table 10. Predictors of social enterprise financial recovery, logistical regression results for primary independent variables including age quadratic.

VARIABLES	Insolvency Recovery		Disruption Recovery	
	Year 1	Year 2	Year 1	Year 2
Equity Ratio	1.084 *** (0.122)	1.644 *** (0.158)	0.062 *** (0.006)	0.059 *** (0.006)
Surplus Ratio	−0.142 ** (0.056)	0.029 (0.106)	0.374 *** (0.027)	0.191 *** (0.026)
Revenue Concentration	−0.293 ** (0.142)	−0.366 ** (0.143)	−0.588 *** (0.063)	−0.595 *** (0.064)
Size	−0.022 (0.018)	−0.037 (0.023)	0.052 *** (0.010)	0.029 *** (0.009)
Age	−0.142 *** (0.036)	−0.116 ** (0.047)	−0.079 *** (0.015)	−0.115 *** (0.019)
Age ²	0.004 (0.005)	0.002 (0.005)	0.003 (0.002)	0.006 ** (0.002)
Constant	0.057 (1.054)	0.970 (1.048)	−0.187 (0.410)	0.398 (0.412)
Observations	10,212	10,212	28,746	28,746
log likelihood	−4194	−4008	−18848	−18959
McFadden’s R-squared	0.0743	0.115	0.0338	0.0281
Adj. Count R-squared	−0.001	0.000	0.038	0.030
Sensitivity	0.60%	1.57%	25.79%	22.58%
Specificity	99.87%	99.70%	84.37%	86.13%
% Correctly Classified	83.74%	83.75%	60.06%	59.75%

Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$. Base Sector: Other Supporting Public Benefit; Base Year: 1991; Robust Errors are Clustered on EIN.

Table 11. Goodness of fit for original and quadratic models.

	Insolvency Recovery		Disruption Recovery	
	Year 1	Year 2	Year 1	Year 2
Difference in BIC'	8.780	9.085	8.318	4.363
Best Fit Model	Original	Original	Original	Original

7.2. Robustness Test 2: Standardization by Total Assets

Despite a large degree of multicollinearity being endogenous to finance ratio research, we had concerns that the use of total revenues as a standardization variable (in addition to using a revised version of it as the operationalization of size) was complicating the specification when there were other variables used in the literature. To evaluate whether some of the high correlation was due to normalizing by total revenues, we instead employed logged total assets as the size measure. The findings are reported in Table 12.

Apart from the size variable, there was no significant difference between the coefficients. The fit variables provide conflicting results, which may be attributed to the lack of uniform samples in the two models. Using log pseudolikelihood, total revenues is the appropriate choice for normalization; using the percentage correctly classified, total as-

sets is the better choice [92]. The Pearson correlation coefficients are still high, with the correlation between logged assets and the equity ratio at -0.491 in the second year in the solvency model. With values of this magnitude, the initial cause for concern and investigation into an alternate variable is not addressed. Therefore, we retain total revenues as a standardization variable and a size variable.

Table 12. Predictors of social enterprise financial recovery for young and small social enterprises, assets as the standardization variable.

Variables	Insolvency Recovery	Insolvency Recovery	Disruption Recovery	Disruption Recovery
	Year 1	Year 2	Year 1	Year 2
Equity Ratio	0.820 *** (0.115)	1.463 *** (0.158)	0.067 *** (0.007)	0.053 *** (0.005)
Surplus Ratio	-0.166 *** (0.060)	0.095 (0.122)	0.359 *** (0.029)	0.032 (0.025)
Revenue Concentration	-0.332 ** (0.145)	-0.313 ** (0.146)	-0.582 *** (0.064)	-0.621 *** (0.065)
Size	-0.156 *** (0.014)	-0.073 *** (0.016)	-0.191 *** (0.008)	-0.216 *** (0.007)
Age	-0.102 *** (0.013)	-0.101 *** (0.013)	-0.043 *** (0.006)	-0.050 *** (0.006)
Observations	9847	9850	28,122	27,543
log likelihood	-3937	-3795	-18068	-17558
McFadden's R-squared	0.092	0.123	0.054	0.061
Adj. Count R-squared	0.001	-0.001	0.025	0.041
Sensitivity	1.08%	1.65%	32.76%	33.85%
Specificity	99.82%	99.66%	78.30%	78.91%
% Correctly Classified	83.97%	83.99%	59.30%	60.20%

Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Base Sector: Other Supporting Public Benefit; Base Year: 1991; Robust Errors are Clustered on EIN.

8. Discussion and Practical Applications

Though there were a few exceptions, empirical testing confirmed the majority of our predictions. The determination of marginal effects also allowed us to attribute magnitudes to the effects, which had not been attempted in the hypotheses. The expected and actual signs on the coefficients appear in Table 13.

Table 13. Summary of Hypotheses Results.

Variables	Expected Sign	Insolvency Recovery	Insolvency Recovery	Disruption Recovery	Disruption Recovery
		Year 1	Year 2	Year 1	Year 2
Equity Ratio	+	+	+	+	+
Surplus Ratio	+	-		+	+
Revenue Concentration	-	-	-	-	-
Size	+			+	+
Age	+	-	-	-	-

8.1. Equity Ratio

The hypothesis regarding the desirability of a larger equity ratio when trying to overcome financial distress ($H1$) were confirmed. Social enterprises with strong net asset gains with respect to revenues are more likely to regain solvency than social enterprises with weaker equity, and gains in the second year of insolvency saw even stronger impact. This result makes sense, as the solvency measure is based on either total asset gains or total liability suppression, and both of these factors can increase net asset gain in the equity ratio. The important lesson is that the growth in total net assets is outpacing the

growth in revenue, meaning more money is being left at the end of the year as a nest egg. The impact of a stronger equity ratio is still a positive force in achieving financial stability, but the magnitude is greatly diminished. This difference is likely due to the sizable gap between the means of the equity ratio between the two samples. This highlights the impact of savings, though it is interesting that having a rainy-day fund has little effect on financial stability.

8.2. Surplus Ratio

There were surprising results on the predictive role of the surplus ratio in becoming solvent. Findings showed a negative relationship in Year 1 followed by an insignificant relationship in Year 2. Therefore, our second hypothesis was refuted for the purposes of becoming solvent but confirmed regarding stabilizing financial resources. This might suggest that the total revenues for recovering social enterprises remains relatively flat, thus allowing an increase in total net assets to stand out against the flat denominator and a lackluster surplus ratio. It could also mean that a healthy increase in total revenues may be allocated more to total net assets than to total expenses.

Findings confirmed our predictions for a strong impact in the financial stability sample from a robust surplus ratio. Here, we see the potential gains of increases in efficiency and profitability as a boost to escape vulnerability. This is where the “market” portion of the double bottom line may also be particularly beneficial, as higher (and thus more “commercial” margins) promote recovery from financial distress.

8.3. Revenue Concentration

As predicted, social enterprises with more diverse revenue portfolios are more likely to recover in both estimations, though the magnitude is stronger in the financial stability model. This helps resolve the question of whether diversification plays a similar role in the recovery of an organization as it does in organizational demise or growth. In the demise literature, such as those testing the Tuckman and Chang [28] indicators against various definitions of financial vulnerability, diversification is shown to be beneficial. On the other hand, revenue diversification appears to hinder growth in other studies [93]. As such, for enterprises that are small and young, recovery looks more like not dying (and the vulnerability models) than it does like growth for large nonprofits (as in the Foster and Fine study).

On one hand, this is very good news. Most start-ups have not had the opportunity to develop specializations and efficiencies in gathering particular revenues, so they are not missing the key to recovery if they do not specialize. They also do not have to compete for revenues against those who may be more established in the same specialization. However, most start-ups also do not have the capacity to diversify across several types of revenues. As such, to the extent that it is possible, start-ups should lay the groundwork for multiple streams of income prior to the onset of difficulties or even prior to launch so that human capital and systems are in place to manage multiple revenue streams.

8.4. Size

Findings were mixed with regards to empirical support for the role of size in financial recovery within a sample that is already young and new. Size is not a factor (other elements held constant) in whether an organization can become solvent. However, larger organizations appear to have an advantage in recovering from potential program disruption. Therefore, evidence suggests a liability of smallness within a sample of young and small social enterprises, offering a contrast to Searing, where smaller organizations showed greater probability of recovery. This is likely due to the uniqueness of the sample (which focuses on start-ups); while the smaller organizations in a population sample may be nimble, those in a sample already restricted to the young and small may be less nimble and more fragile. We suspect that a minimum of resources is necessary to be nimble and

pivot, so the smallest of the small may not have that capacity and, thus, be more likely to not recover.

8.5. Age

The liability of newness was not supported in a sample of young and new organizations, and a universal disadvantage for older organizations was present in both samples. In addition to suggesting that an age threshold separates beneficial and adverse impacts, this may also signal an ability to adapt to the environment in a way that helps the organization survive. We suspect this is due to the aforementioned liability of adolescence [90,91,94], where the very new are still subsisting on start-up capital. Since our sample focuses on start-ups, the entire sample is relatively new compared to most of the studies in the literature; therefore, what an average study considers a young enterprise may still fall outside of the scope of our sample. Since the most vulnerable age according to our sensitivity results appears to be at just under 10 years, this does appear to be the case.

9. Limitations

As with most empirical studies, there are limits and necessary considerations regarding these results. As mentioned previously, while the data used in this study are among the more reliable, the data on Form 990 can be inaccurate [84]. The focus on small and young organizations might exacerbate this disparity, as these enterprises often rely on volunteers or individuals with less professional experience. During the time period covered by this study, nonprofit social enterprises which made less than \$25,000 per year were not required to file the 990, and this threshold shifts during the time period.

Second, since four full years were needed to be a part of the sample, any organization that was vulnerable for two years and then ceased operating or filing were not included. Thus, the resulting sample may only contain the healthier of the vulnerable population. Since it is unlikely, however, that the organizations that died during the sample had higher levels of revenue or net asset accumulation than those that survived, the data would suggest that the impact of the financial indicators might be understated rather than overstated.

Third, due to the construction of the 4-year spells of analysis, some social enterprises may have been included for multiple periods. For example, if there was a period of 5 years where the first three years were vulnerable and the final two were not, this social enterprise would have two observations, one of which would have a dependent variable denoting a failure to recover (reflecting years 1, 2, 3, and 4) and one which would have a dependent variable signifying recovery (reflecting years 2, 3, 4, and 5). This is not common, but it does occur. The exclusion of these social enterprises does not significantly impact the results.

10. Conclusions and Policy Implications

While small and young social enterprises account for a significant portion of the social sector, there is very little scholarly literature dedicated to their resilience. This study uses financial ratios traditionally used to analyze and predict social enterprise demise to explore the signals of financial recovery among social enterprises. Doing so yields not only empirical and practical advice for practitioners, but also contributes to the academic literature in several ways.

This study provides statistical support for financial practices that increase the probability of an organization's recovery from financial distress. Retaining net assets is more important than simply increasing revenues. This is especially true when recovering from financial disruption since there appears to be a liability of size throughout the study's age range. Revenue portfolios should be diversified to increase the social enterprise's chances of recovering. Age (the only indicator that is out of managerial control)

does not seem to affect an organization's likelihood of recovery if other factors are constant. These insights benefit staff and board members as well as potential supporters of the social enterprise.

This study meaningfully contributes to academic literature on social enterprises by providing a novel approach to financial ratio analysis, focusing on resilience rather than institutional demise. This study also continues the study of liabilities or smallness and newness among social enterprises, finding mixed support for the former and no support for the latter. The revenue diversification literature gains a unique insight from an area that could be considered the crossroads of two conflicting streams of empirical findings: that diversification prevents demise but hurts growth. This study shows that the recovery process, though growth is occurring, more strongly resembles the positive relationship found in the demise literature. Finally, this study contributes relevant analysis to a growing catalogue of literature on social enterprise financial management—a nascent resource still heavily reliant on research and theory from other fields.

This study's findings also carry implications for social enterprise policies. First, the norms (whether political, institutional, industrial, or cultural) surrounding net asset accumulation by nonprofits and social enterprises need to be revisited and reevaluated. The existence of outliers with significant endowments (for example, hospitals and institutions of higher education) help support this faulty interpretation. More attention should be paid to the larger portion of the social enterprise sector that do not have these cushions. Smaller social enterprises would benefit by freeing themselves from their reliance on lines of credit to even cash flow—a practice which both incurs interest and enables a slide into debt problems similar to those in personal finance. There must be an international discussion on appropriate levels of social enterprise net asset retention so that social enterprises can act to prevent future damaging depictions of this issue in popular media.

There is potential to expand this research through several avenues. Better, more complete data will improve the effectiveness of the analysis and would address the limitations mentioned earlier. Second, predictive models should be built similar to the evolution of the financial ratio literature in predicting demise. Logistic models are useful, but properly weighted predictive models tested on other samples would encourage the development of software applications that could make such analysis accessible to the start-ups which need it. Finally, future studies should drill down further into contextual elements such as subsectors to improve awareness and to increase the availability of better data. Narrowing the scope in either subsector or geographical location also makes it easier for researchers to learn more about social enterprises' financial characteristics while furthering their appreciation for the complex factors that influence the future of vulnerable organizations.

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