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# Financial Analysis for Measuring and Comparing Risk in Grantmaking Portfolios

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*Keywords: Risk, philanthropy, grants, performance measurement*

## Key Points

- Risk has not been treated in a systematic way that allows for a rich understanding of the extent to which foundations are, or should be, incorporating or evaluating risk in philanthropy.
- In this article, we conceptualize and develop a tool to evaluate the levels of philanthropic risk that foundations maintain through their grant portfolios.
- We create an index of aggregated risk at the portfolio level using several financial indicators based on previous theory and literature. Then, we test the index on a sample of foundations and their grantees in the state of Georgia and compare risk levels across community, corporate, family, independent, and operating foundations.
- Our results show small differences in philanthropic risk levels when measured by financially oriented proxies between foundation types.

## Introduction

Managing risk is one of the key functions in philanthropic grantmaking. Risk must be addressed at the grant, strategy, and organization levels. Every grant involves risk, every strategic direction encompasses some degree of risk, and every foundation has its own preferred level of risk tolerance. Integrating risk across all these levels is a risk-management challenge that is understudied and where tools for practice are lacking.

As with any choices about the distribution of limited resources under uncertain conditions,

grantmaking entails the risk of failure of specific projects along with the associated loss of the foregone outputs from other deserving organizations that were denied grant funding. Grantmakers seeking to protect their reputation and, perhaps most important, to advance their mission and strategy have an interest in limiting these risks. Thus, careful analysis of objective data on an organization's finances and operations is an important risk-management practice in philanthropy.

But due diligence alone is not sufficient to balance or align the risk preferences expressed in a foundation's strategy with grantee selection. More and more, the philanthropic sector is being asked to and is taking the responsibility for moving the needle on complex social issues through seeding innovative projects, elevating marginalized voices, scaling successful practices, and strengthening organizational infrastructure (Scott, 2002; Anheier & Leat, 2006). Yet the desire to limit the risk of grant failure during the due diligence process can limit foundations' perspective to favoring tried and true approaches within organizations that have a track record of success. This practice has the potential to bias judgments against organizations that may yield large returns as a social investment, all because these organizations may appear less financially and operationally stable during startup, transition, or growth phases.

This tension between strategy risk and grantee risk poses a challenge for grantmaking practice.

How can the risk preferences inherent in a foundation's strategy better align with the risk tolerance allowed in due diligence? Our sense is that an aggregate assessment of risk at the portfolio level would allow program officers to accept higher levels of risk with some organizations and more conservative levels of risk with others. Such a measure would also lead foundation practitioners to think about the risks and costs of failure on balance rather than on each grant.

In this article, we propose a method for developing a single numeric value of the risk a foundation may accept across its entire grant portfolio. The proposed value is based on an index that combines indicators of financial health and financial efficiency and a proxy for ease of monitoring. The index builds on models of nonprofit risk by Tuckman and Chang (1991) and Greenlee and Trussel (2000). This measure is admittedly limited in scope. We do not include other critical nonfinancial measures that also affect risk exposure, such as operating context, time, stakeholders, and outcome performance. Although these measures are important, the final index represents a compromise between practical usability and comprehensiveness. To limit the burden of data collection and to allow comparison across foundations, we chose to focus on indicators that are quantifiable across organizations and that can be calculated using data that foundations typically collect and are otherwise publicly available. In this article, we therefore contribute a first step toward bridging a foundation's inherent risk preferences, as articulated through foundation mission and strategy, with its ongoing risk management practices, as exercised through due diligence during grant application review.

After a brief review of the existing literature related to philanthropic risk, we describe the proposed aggregated index. To demonstrate its use, we then apply the index to the grant portfolios of 75 foundations in the state of Georgia and measure variation across different types of foundations. We conclude with a discussion of the implications of the findings

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from our model testing and the utility of the proposed aggregated risk measure for philanthropic practice.

### Literature Review

Philanthropic risk has not been treated in a systematic way that allows for a rich understanding of the extent to which foundations are, or should be, incorporating or evaluating risk in their grantmaking. The academic literature has focused more on issues of risk in nonprofit management (Tremper, 1994) and has largely ignored risks in philanthropy. When the concept of risk is mentioned, it is most likely to be in reference to investments rather than to grantmaking. Furthermore, discussions about grantmaking risk largely focus on foundation strategy or guidance on due diligence. The field lacks theory development, rigorous analysis, and quantifiable indicators of philanthropic risk. Below, we briefly summarize the existing literature where risk is discussed in relation to investments, foundation strategy, and due diligence.

### *Investments*

In institutional philanthropy circles, risk is most often referenced in the context of the investments of foundation assets. Foundation trustees pay close attention to the maintenance and growth of their assets and seek to maximize returns with appropriate risk. This is essential, since the ability of the foundation to pursue its mission and distribute grants is tied to the performance of a

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foundation's investments. Investment strategies and risk preferences in this domain are regularly discussed and carefully documented. This has not been the case on the grantmaking side.

#### *Strategy*

Normative proposals for the level of risk foundations should assume in grantmaking can be found in publications describing emerging models of philanthropy. Anheier and Leat (2006) encourage foundations to be more risky in their grantmaking as a way of engaging in creative philanthropy, which they claim can lead to greater social impact. In a description of risk in venture philanthropy, Scott (2002) conceptualizes philanthropic risk as mission risk (foundations focusing on long-term strategies and systematic social change); and entrepreneurial risk (foundations targeting resources to people of color and older institutions).

Additionally, Kramer (2000) suggests that foundations should take considerable risks in their grantmaking to achieve their mission but

reduce the level of risk over time. He proposes that the goal of risk management in foundations should not be to eliminate risk, but to mitigate risk exposure through knowledge, experience, and proximity. A few descriptions of foundation risk behavior can also be found in the literature. Higuera (1992) reports that foundations tend to assume risks by funding innovative programs in unproven nonprofit organizations. Olenick (1998) finds that foundations are able to avoid risk by making grants to well-managed and reliable nonprofit organizations.

#### *Due Diligence*

The final area where grantmaking risk is raised is in philanthropic due diligence. Based on a survey of corporate foundations, Bare (2002) presents a comprehensive proposal for examining risks of individual investments during the grantmaking process. He provides a list of factors that program officers and trustees can use to evaluate grantee proposals, which include factors such as novelty of the idea, clarity of the logic model, leadership, and implementer's history. Grantmakers for Effective Organizations and LaPiana Associates (Culick, Godard, & Terk, 2004) published a due diligence tool that offers guidance on reducing risk in grant selection and throughout the grant implementation phase.

The small body of literature on risk in philanthropy does offer useful practical guidance, but it is limited in advancing understanding of important questions on why and how risk varies across foundations, how risk preferences are communicated and managed throughout the organization, and how due diligence practices align (or misalign) with foundations' inherent risk preferences. In the absence of a quantifiable and comparative indicator of risk, the field cannot make progress on understanding risk in philanthropy. Our interest in developing a risk score for a foundation's portfolio is both to provide a tool for practice and to produce a quantifiable indicator that can be used by scholars for future analysis and hypothesis testing.

#### **Developing the Portfolio Risk Score**

We combine eight measures to create an

TABLE 1 Portfolio Risk Index Measures

	Variable	Method	Direction	Relationship to Risk Management
Financial Health	Debt ratio	Ratio of total liabilities to total assets	Higher = riskier	Nonprofits should keep debt ratio low as a strategy to hedge against financial risk (Chang & Tuckman, 1990). Increase in debt ratio increases financial vulnerability (Tuckman & Chang, 1991).
	Revenue source concentration	Index of revenue source (public support, government, dues, program revenues)	Higher = riskier	Nonprofits seek less volatile sources of funding to reduce risk (Gronbjerg, 1990). Nonprofits diversify revenue sources to reduce financial risk (Fischer, et al., 2011; Bennett et al, 2010)
	Surplus margin	Excess of revenues over expenses	Lower = riskier	Low surplus increases financial vulnerability. A charity operating with high surplus can reduce surplus before it needs to reduce services during financial stress (Tuckman & Chang, 1991).
	Administrative cost ratio	Ratio of administrative expenses to total revenues	Lower = riskier	The ability to reduce administrative costs post-financial trauma buffers nonprofits from cutting programs (Greenlee & Trussel, 2000). Nonprofits with low administrative costs are more financially vulnerable (Tuckman & Chang, 1991).
	Grant dependence	Ratio of grant amount to nonprofit revenue	Higher = riskier	Higher ratios reflect greater reliance of nonprofit on foundation gift.
Financial Efficiency Risk	Program expense ratio	Ratio of program expenses to total expenses	Lower = riskier	Lower proportions of program expenses reflect lower program output per dollar.
	Fundraising expense ratio	Ratio of fundraising expenses to fundraising revenues	Higher = riskier	Higher fundraising costs to revenues reduces program output per dollar (Weisbrod & Dominguez, 1986).
Ability to Monitor	Proximity	Distance between foundation and grantee	Higher = riskier	Geographically remote projects present risky challenges to funders. (Kramer, 2000).

indicator of portfolio risk. The metric is based on an index that combines indicators of financial health and financial efficiency and a proxy for ease of monitoring. The index builds

on models of nonprofit risk by Tuckman and Chang (1991) and Greenlee and Trussel (2000) and focuses on indicators that are quantifiable across organizations and can be calculated using

*The final variable is an exception to the rule of using existing data that is readily available in the grant application or Form 990. Here, the geographical distance between the foundation and the nonprofit is measured by indicating whether the grantee is located in the same county, in an adjacent county, or in a county beyond adjacent counties.*

data that foundations typically collect and are otherwise publicly available. Our objective is to create a robust measure of portfolio risk that foundation practitioners can replicate.

Five of the eight measures are related to financial health for each grantee organization: debt ratio, revenue source diversification, administrative cost ratio, surplus margin, and grant dependence.

Two measures are associated with the financial efficiency of the grantee: program expense ratio and fundraising expense ratio. The final indicator is a proximity variable that measures the distance between each foundation and grantee. The farther away a grantee is, the more costly it is to monitor the progress of grant projects and, therefore, the riskier it is for the foundation in terms of oversight and grantee accountability (Kramer, 2000). (See Table 1.)

Utilizing the set of eight variables, we constructed a portfolio risk score for each of the 2,476 grantees in our data set. In this section we describe the methodology for creating the risk score.

The first step in creating the portfolio risk score was to create the variables using data from the IRS Form 990 for each nonprofit. Alternatively, foundation practitioners may utilize the data provided in the grant application. The debt ratio variable was created by dividing the year-end liabilities of the nonprofit by their year-end assets. The revenue source diversification variable was constructed using the Herfindahl index. The shares of revenue from each source – government support, public support, dues, and program revenue – were calculated, squared, and summed to produce an index for each nonprofit in the sample.<sup>1</sup> This type of index is one of the most commonly used measures of revenue diversification (Fischer et al, 2011).

The administrative cost ratio was calculated by subtracting the amount of program expenses reported on organizations' Form 990 from the total amount of expenses and then dividing by total revenue. The surplus margin was calculated by dividing the difference between total revenues and total expenses by the total revenues for each nonprofit in the sample. The program expense ratio was calculated as the ratio of program expenses to total expenses. The fundraising cost ratio was calculated as the ratio of fundraising expenses to fundraising revenues; the size of the foundation's investment in a particular nonprofit was measured as the ratio of the grant size to the nonprofit's total revenue.

The final variable is an exception to the rule of using existing data that is readily available in the grant application or Form 990. Here, the geographical distance between the foundation and the nonprofit is measured by indicating whether the grantee is located in the same county, in an adjacent county, or in a county beyond adjacent counties.<sup>2</sup>

<sup>1</sup> The Herfindahl Index is a measure of concentration that is commonly applied to industry concentration in antitrust oversight, but it has also been applied to measure individual organizations' concentration or dependence on specific revenue streams. Guidance on calculating a Herfindahl index is widely accessible on the Internet, such as through Wikipedia: [http://en.wikipedia.org/wiki/Herfindahl\\_index](http://en.wikipedia.org/wiki/Herfindahl_index)

<sup>2</sup> The county level of geography is relevant to this article because all grantees and foundations in the sample are located in the same state. Other examinations of geography may find other levels of geography more useful.

TABLE 2 Summary Statistics for Variables in Portfolio Risk Index

Variable	Obs.	Mean	SD	Min.	Max.
ln (assets)	2440	14.82	2.84	0.00	22.83
Revenue Concentration	2418	0.63	0.30	0.00	1.00
Debt Ratio	2440	0.00	0.02	0.00	1.00
Surplus Margin	2441	0.24	0.09	0.00	1.00
Grant Dependence	2441	0.00	0.02	0.00	1.00
Proximity	2441	0.35	0.41	0.00	1.00
Program Expense Ratio	2436	0.23	0.19	0.00	1.00
Fundraising Expense Ratio	2375	0.13	0.24	0.00	4.73
Combined Risk Score	2371	0.17	0.09	0.00	1.00

For each component in the risk index, the measure was standardized with a range of 0 to 1, with the lowest value given a 0 and the highest given a 1<sup>3</sup> (O’Sullivan, Rassel, & Berner). The final index was also standardized in order to provide a more reliable estimate given that the dependent variable is a proportion; this produces identical outputs as using generalized least-squares estimation in a factorial logit model. In standardized form, the portfolio risk score can range from 0 to 1, with higher values representing higher levels of risk. (See Table 2.) This step of standardizing the score is an option and is not necessary for using the score.

### Data and Method

To explore variations in philanthropic risk using the portfolio risk score, we examine the grant portfolios of foundations based in Georgia. For this analysis, we utilize a 2005 data set of Georgia foundations and their grantees. The data set is a combination of multiple sources of data. First, a list of grantees was acquired from the 2005 IRS 990-PF forms of 75 Georgia foundations. The foundations were selected using a stratified sampling method to include foundations of various types and sizes from the different regions of the state. Second, the grantees located in Georgia were matched with data from

their 2005 IRS 990 filings.<sup>4</sup> Additional data on foundation characteristics were collected from the Foundation Center database for each of the 75 foundations. Matching the grantee data with the foundation data resulted in a sample of 3,106 grants to 2,476 grantee organizations in Georgia. Because of missing values on some indicators, the final analysis includes 2,371 grantee organizations and 75 foundations.

Given the nested structure of this dataset, with grantee organizations nested within foundations, we incorporate hierarchical linear modeling to run our regression analysis. This method allows for more reliable parameter estimates than using the ordinary least-squares method with this type of data (Raudenbush & Bryk, 2002). In addition, this method allows us to model differences within and between foundations.

In the fully conditional model, we estimate the differences between the grant portfolio risk scores of community, corporate, family, independent, and operating foundations, controlling for foundation size (by total giving in millions of dollars) and the size of the grantee organization (by the natural logarithm of total end-of-year assets).

<sup>3</sup> Fundraising expenses were not standardized because they have a value from 0 to outliers that are greater than 1; standardizing this variable deflates the index due to the outliers.

<sup>4</sup> IRS 990-PF data and the core and digitized Form 990 public charity data were obtained from the Urban Institute National Center for Charitable Statistics. Because nonprofit data were derived from the Form 990, the nonprofits in this analysis exclude nonfiling religious organizations and nonprofits with annual income of less than \$25,000.

TABLE 3 Hierarchical Linear Modeling Conditional Model Regression

Fixed Effect	Coefficient	Standard Error*	T-ratio	Approx. d.f.	P-value
For INTRCPT1, B0					
INTRCPT2, G00	0.188756	0.000870	216.950	67	0.000
COMMUNITY, G01	-0.018872	0.009924	-1.902	67	0.061
CORPORATE, G02	-0.037096	0.008143	-4.556	67	0.000
FAMILY, G03	-0.053927	0.012987	-4.152	67	0.000
INDEPENDENT, G04	-0.021087	0.005242	-4.023	67	0.000
FDN GIVING, G05	-0.000331	0.000102	-3.234	67	0.002
For IN(ASSETS) slope, B1					
INTRCPT2, G10	0.003081	0.001027	3.002	72	0.004
Random Effect	Standard Deviation	Variance Component	df	Chi-square	P-value
INTRCPT1, U0	0.02283	0.00052	63	168.801	0.000
IN(ASSETS) slope, U1	0.00459	0.00002	68	103.16447	0.004
Level-1, R	0.08434	0.00711			

\*Robust standard errors estimated using maximum likelihood estimation.

Our final level-one and level-two equations are:

$$L1: \text{Risk Score} = b_0 + b_1 X_1 + r$$

$$L2: b_0 = \gamma_{00} + \gamma_{01} W_1 + \gamma_{02} W_2 + \gamma_{03} W_3 + \gamma_{04} W_4 + \gamma_{05} W_5 + u_0$$

$$b_1 = \gamma_{10} + u_1$$

Where:  $X_1$  is the size of the grantee organization.

$W_1$  is a categorical dummy variable for community foundations.

$W_2$  is a categorical dummy variable for corporate foundations.

$W_3$  is a categorical dummy variable for family foundations.

$W_4$  is a categorical dummy variable for independent foundations.

$W_5$  is the size of the foundation.

$r$  is the individual grantee level error term.

$u_0$  is the foundation level intercept error term.

$u_1$  is the foundation level slope error term.

Operating and other foundations that are not categorized are the reference group. The models assume randomly varying intercepts and slopes.

We tested a model of differences in the overall portfolio risk score across 75 foundations categorized as community foundations, corporate foundations, family foundations, independent foundations, and operating foundations controlling for grantee size and foundation size. (See Table 3.)

### Results

Our findings suggest that community foundations and operating foundations have the highest grant portfolio risk score. While independent foundations and corporate foundations have lower risk scores – two and four points lower respectively – family foundations have the least risky grant portfolios, with a score that is more than five points lower than community and operating foundations, on average. The results are statistically significant, except for the community foundation coefficient.

The distinctions in the portfolio risk score may be partially explained by differences in grantmaking approaches. Community and operating



foundations have the highest risk levels, but have different approaches to grantmaking that may raise risk for both. Community foundations tend to have large proportions of donor-advised funds to total grantmaking, resulting in many small and dispersed grants throughout the community. Operating foundations, in contrast, tend to make fewer grants, focusing on specific organizations rather than pursuing competitive grantmaking. Each of these approaches could raise risk exposure.

The results from this comparison of risk scores across foundations raise important questions for future research. We need to understand more about how the dynamics of organizational leadership and structure lead different types of foundations to exhibit different risk preferences in their grantee selection. For instance, foundations of different types have varying degrees of reliance on program officers, family members, donor-advised funds, and community panels, and these mechanisms may influence the riskiness of the grant portfolio. We have begun to develop some preliminary knowledge about how grant practices differ across foundations (Ashley & Faulk, 2010; McGinnis & Ashley, 2011), but more work is needed in this area, specifically in regard to risk.

### Conclusion

In this article we conceptualize, develop, and test a practical, financial-based index that can be used by researchers and practitioners to evaluate philanthropic risk in a variety of contexts and for a variety of research questions. The methodology combines the risk scores of individual grantee organizations into an aggregate measure to model a strategy that can be of practical use to foundation practitioners. Foundation leaders and program officers may incorporate such an evaluation into their grant cycle to analyze their own practices with regard to risk and to more deliberately match the level of risk in their grant portfolios to their preferred philanthropic risk level as expressed in their strategy and mission. Rather than simply examining the risk of each grant, foundation leaders can weigh the risk of their entire portfolio in any given grant cycle against the benefits of what they hope their

*Rather than simply examining the risk of each grant, foundation leaders can weigh the risk of their entire portfolio in any given grant cycle against the benefits of what they hope their strategy to achieve.*

strategy to achieve. Foundations also could use this tool as a means to articulate and assess their own risk preferences. Their overall risk preferences could then be more intentionally developed through strategic awareness and risk management throughout the grant selection cycle.

Our preliminary analysis using a sample of foundations in Georgia revealed statistically significant variation across foundation types. As we demonstrate, researchers may also use this type of metric to better characterize philanthropic risk and to evaluate foundation grantmaking behavior with regard to philanthropic risk. Future research is needed to further examine how single risk decisions about each grant choice relate to the riskiness of a foundation's overall strategy and whether the individual, one-grant-at-a-time focus of due diligence limits risk taking.

The comment by Steve Gunderson quoted at the beginning of this article makes a strong statement about the expectations among some in the field about the risks foundations should take in their grantmaking strategy. This sentiment is central in contemporary notions of philanthropy, which emphasize the social-innovation role that foundations can fill because of their unique organizational and financial characteristics. With the aggregation of risk at the portfolio level, we hope to facilitate greater attention to and awareness of foundations' own risk tolerance in grantee selection in order for it to be more

intentionally and strategically evaluated to match their own underlying risk preferences and grantmaking goals.

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