

Financial Determinants for Donation Income of Chinese Non-Public College Foundations

Leiyu Mo¹, Chengwen Hong²

¹School of Management, China University of Mining and Technology (Beijing), Beijing, P.R. China

²Higher Education Institute, Beijing Normal University, Beijing, P.R. China

ronmo2008@163.com

chwhong@bnu.edu.cn

Keywords: Non-Public College Foundations, Donation Income, Financial Determinants, Empirical Study, Information Disclosure

Abstract: Fundraising through college foundations has become an important and inevitable trend for universities and colleges around the world. Recently, there is rapid expansion of college foundations in China, and more than 90% are non-public foundations, which can only collect funding through non-public channels. But due to intensely competitive yet limited charity market in China, it is hard for college foundations that mostly inexperienced to absorb sufficient social donation to meet demands from themselves and colleges. How to attract social donation in the long run could be a crucial and hard task for these college foundations. Previous studies had shown that financial related information are among the most influential factors on donation. We posit here that financial factors would have important influence on donation of Chinese non-public college foundations. We test our regression model through analyzing data from 365 Chinese non-public college foundations according to their financial disclosure at the end of 2015. Statistics are analyzed and proved: The donation income of Chinese non-public offering college foundation is positively associated with its Foundation Transparency Index (FTI), public expenditure, revenue and expenditure ratio, and negatively influenced by its age and investment income. Based on these findings, there is evidence to suggest that regression analysis can assist Chinese college foundations to understand the factors that predict philanthropic giving, and engage in more fruitful, meaningful, and strategic fundraising.

1. Introduction

Higher education popularization, as well as aggravated international competition among universities and colleges has intensified the demand for spending on development. Funding deficiency of universities and colleges has become an ever-worse problem that has been exasperated by decreasing subsidies from the governments. Fund-raising through foundations has become an important yet inevitable trend for universities and colleges around the world. The annual donation for US college foundations had reached 37.4 billion and 40.3 billion US dollars respectively in 2014 and 2015, which contributed approximately 25% of the college expenses and provided inspiring pattern for college foundations in other countries.

College foundations in China have had a steady expansion since the first college foundation was officially registered in mainland China from 1992. The total number reached 457 at the end of 2014. The growth has not diminished (See Figure 1).

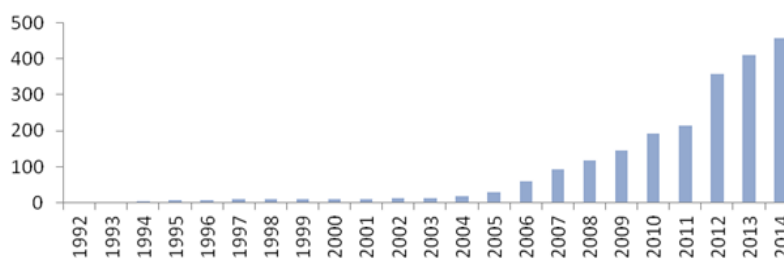


Figure 1. Quantity of Chinese College Foundations

Among them, more than 90% (407) are registered as non-public foundations. Non-public college foundations in China, could be broadly defined as college foundations that are legally registered in central or local branch of ministry of civil affairs in China. Such foundations can not solicit funds directly from general public. In this term, “non-public” is not suggesting that the foundations are run by private entities. On the contrary, most colleges (above 90%) in China are run by public agencies, and so do the college foundations. According to foundation regulations, non-public college foundations in China have lower requirements on registration capital, annual public expenditure and information disclosure than public foundations. However, they have more difficulty in generating public funds in China because they are not permitted to promote their fund-raising activities in public occasions. but they still receive preferential tax treatment and other regulatory privileges as other nonprofits organizations. Table 1 summarizes the key differences between public and non-public foundations.

Table 1. Chinese regulation on 2 types of foundations

	Public Foundation	Non-public Foundation
Registration Capital(monetary fund on the account)	8 Million Yuan for central and 4 million yuan for local agencies	2 Million Yuan
Expenditure on the public benefit undertakings	No less than 70% of the gross income of previous year	No less than 8% of the fund balance of previous year
Solicit funds directly from general Public	Yes	No
Information Disclosure requirements	High	Low

And due to competitive yet limited market for charities, and lack of experience on sustainable fund-raising, it is hard for Chinese college foundations to absorb sufficient donation for meeting demands for themselves and colleges in the long run. But college foundations are showing their potential as emerging parts and leading pioneers among Chinese charitable organizations, especially among non-public foundations. It is revealed by the press that during 2015, Chinese college foundations had absorbed 47.5% of charitable donations in China (China.com.cn, 2016). The total net assets of the Chinese college foundations had accumulated to 25.2 billion yuan, and charitable giving to these organizations reached an estimated 40 billion yuan since 1990s. According to the data from China foundation center at the end of 2014, the 407 non-public college foundations had received 13% of the donation amount and 44% of the total net assets to Chinese non-public foundations, which represented a sizable slice of Chinese charitable markets. Additionally, the information disclosure level of the college foundations is higher on average basis according to the China Foundation Transparency Index (FTI)¹, which signified a better conscientious in financial regulation and hope for sustainable development.

Above all, college foundations have inner motivation and good potential for further fundraising, especially in emerging charity market in China. More than 2,000 universities and colleges in China

¹China Foundation Transparency Index (FTI) is developed by China foundation center, which is among the leading source of Chinese philanthropic foundation information for shareholders in the non-profit sector. See detail in <http://en.foundationcenter.org.cn/>

are likely to establish their own college foundations in the future, and they are all keen on knowing the factors influencing donation decision. While many factors may lead to donation decision, financial determinants, which reflect financial regulation and organization operation situations, usually revealed in annual reports of the organization, could be one of the most decisive facets in donation decisions. Data drawn from empirical analysis on overall Chinese college foundations would not only state the financial status quo of the organizations, but provide clues on how to improve in the future operations because these foundations want to attract more funds.

2. Hypothesis development and empirical models

We first model the probability of disclosing financial determinants as decisive influence of social donation of Chinese non-public college foundations.

2.1 Financial information and influential factor for college foundations

Donors do not have limitless resources and therefore, foundations must compete for contributions according to donors' preference. Empirical research using 990 alumni provides evidence for the strong link between financial numbers and donations (Gregory et al., 2014,[1]). Trussel & Parson concluded that financial efficiency, stability as well as reputation of the organization and information disclosure quality are the four most influential factors for donation decisions (2008,[2]). Administration inefficiency ratio, measured by price of donation and fundraising expense (Jacobs & Marudas, 2009,[3]). Other factors include program service revenue, government support, assets, age (Tinkelman & Mankaney, 2007,[4]). Autonomous income (investments, rents, program services and other income) (Callen, 1994,[5]) has been analyzed and found to have mixed effects on donation income of the charitable organizations. Besides, Chinese studies have also analyzed the influence of the registration place (the city and its wealth distribution situation), the registration nature of the foundations (registered in central or local agencies) on organizational donation income (Liu et al., 2013,[6]).

Previous research into college foundation donation have focused predominately on factors that influence alumni donation since they constitute a very important part of total donation for college foundations in American situation. Numerous factors have been identified to influence alumni donations decisions by empirical studies during the decades, including alumni's experiences during student hood, professional success, and financial related information of the college foundations.

And college performance, financial success of alumni, as well as demographic characters of alumni donors have been deeply explored (Amber & David, 2014,[7]). Although some research on NPOs financial disclosure has discussed charitable organizations in education industry, and compared to other NPOs (Parsons, 2007,[8]), research concentrate on financial factors of college foundation had been limited.

In this study, we test only on the college foundations, which would reduce measurement error relative to testing heterogeneous samples. We posit that the financial data would have influential effect on their social donation income, and especially from the perspective of China since situation in China is meaningful and unique since the charitable giving is on a fast-developing phase, and experiences are still scarce specially for young and helpless non-public college foundations.

So the hypotheses we would develop should base on both previous studies and weak information environment of Chinese college foundations. Besides, unique characteristics and indicators used by Chinese charitable organizations should be taken into considerations.

Based on the above discussion, we develop the following hypotheses:

Hypothesis 1: Information quality will be positively associated with social donation income. Although disclosure requirement for non-public offering foundations is lower, empirical studies usually support more information disclosure for non-profit organizations (NPOs), especially at their initial stage would help in their fund-raising.

Hypothesis 2: Size of the foundations will be positively associated with social donation income.

Larger organizations(size) may have more resources and experience to draw on when they making further plan and strategies .

Hypothesis 3: Public expenditure will be positively associated with social donation income.

As suggested by almost all previous studies, more expenditure usually signify more charitable activities had been organized,so the funds had been efficiently used.

Hypothesis 4: Investment ratio will be positively associated with social donation income.

Since a large part of donations for Chinese college foundations have restricted usage, foundations have to strive ways for gaining more revenue to survive, and their investment effort may be appreciated by potential donors.

H5: Return on investments will be positively associated with social donation income.

Results of previous studies are not consistent, and we suppose here if the investment brought reasonable rewards would not only shows the efforts of foundation employers but their investment insights, and may attract more donation.

Hypothesis 6: The age of the foundation will be positively associated with social donation income.

We hold that more experience may signify more sophisticated plans and fundraising skills despite of mixed results from previous research.

Hypothesis 7: The revenue expenditure ratio will be positively associated with social donation income.

Non-profit organizations, especially charitable foundations would always pay attention to maintain a sustainable budget , which would cater the conservative environment and requests from general public.

Hypothesis 8: The vitality of the foundation will be positively associated with social donation income.

As suggested by Annual Report on China Foundation Development 2014,vitality of foundations that is defined as “(revenue + expenditure) /net assets” would indicate the efforts that has been devoted to the foundations. The bigger the ratio the more potential and efforts that have been shown (Liu, 2015,[9]).

Some of the factors that may have influential impact on donations are not included in the study because of the following reasons:

- “Government support”, which is proxy of revenue from government, is not taken into consideration since there were only 4 Chinese non-offering college foundations that got government subsidies in 2014.
- “Program expenses” is not included because three special situations in China: (1) Employers of college foundations would get salary from college while working for the foundation. And labor costs are calculated as 0. (2) The limitation for services expense is 5% of public expenditure according to Chinese charitable regulation, and these costs is extremely low and resemble for college foundations since the salary of the employers are actually paid by the colleges rather than college foundations. (3) It is also Chinese social norm to limit the “indirect” cost for charitable organizations. Besides, “Price of donations”, which is based on program expense, is not included either.
- “Program revenue” is not included since a large number of the Chinese college foundations hasn’t disclosed this information.
- The registration areas and nature are not included because most universities and their foundations are located or registered in relatively prosperous areas in China. And more than 90% of the college foundations are registered in local branch agencies of Ministry of Civil Affairs of P.R.China.

2.2 Variable Selection and model specification

- Criterion variable

Criterion variable, as dependent variable, $\ln(\text{Donation})$, is the natural log of subsequent-year donation income for college foundations, as derived from China foundation center.

- Predicting variables

Predicting variables in this study, also known as independent variables, including information disclosure quality, size of the college foundation, public expenditure, investment ratio, return on investment ratio, age of the foundation, revenue expenditure ratio, revenue and expenditure to assets ratio are selected for reflecting the financial health that may influence the donation income. Variables and their specifications are listed in Table 2.

Table 2. Variable selection

Variables and specifications		
Variable name	Variable code	Definition and specification
Social donation income	Donation	Social donation income of the subsequent year
Information disclosure quality	FTI (Foundation Transparency Index)	
Size of the college foundation	Size	Net assets of the foundation
Public expenditure	Pub_E	
Investment ratio	Inve_R	Investment / net assets*100%
Return on investmentratio		Return on investment /investment
Age of the foundation	Age	Age since officially registered
Revenue expenditure ratio	Rev_E	Total revenue/ total expenditure
Revenue and expenditure to assets ratio	Rev_A	(Revenue+ expenditure) /net assets

- Foundation Transparency Index (FTI) is the proactive solution of China Foundation Center to set a new standard for the ethical conduct of foundations in China. FTI ranks all over 4700 Chinese foundations against a remarkably comprehensive checklist of 41 'transparency indicators'.
- Size is measured by net assets instead of total assets at the beginning of the year since too many missing value would turn up.

2.3 Setting and samples

We selected all 407 non-public college foundations that are documented in China foundation center at the end of 2014.

We obtained financial data of Chinese college foundations mainly from two sources: (1) most of the data come from China foundation center that documents the basic financial information of Chinese charitable organizations in a comparative manner. (2) Complementary information from official websites of the college foundations.

2.4 Model specification

Our aim is to see whether financial data would have effect on donation income of Chinese college foundations, and to testify whether the effect is beyond existing explanations. We adopted the model developed by Weisbrod and Dominguez(1986,[10]):

$$\ln(\text{Donation})_t = \beta_0 + \beta_1 \text{Price}_{t-1} + \beta_2 \ln(\text{Fundrasing Expense})_{t-1} + \beta_3 \text{Age}_t \quad (1)$$

Price signifies the price of donation, which usually is defined as “total expenses/program expenses”, while Fundraising Expense is the expenses on fundraising, and Age is a proxy of “age

since inception of the organization”.Variants and extensions of this “price-age-fundraising model” have been employed in several dozen studies to date.

And one extension model in China which combines the characteristics of Chinese charity market is illustrated as followed:

$$\ln(\text{Donation})_t = \beta_0 + \beta_1 \text{Info_Quality}_{t-1} + \beta_2 \text{Admin}_{t-1} + \beta_3 (\text{Fundraising Expense})_{t-1} + \beta_4 \text{Age}_t + \beta_5 \ln \text{Size}_{t-1} + \beta_6 \text{AREA} + \beta_7 \text{Industry} + \beta_8 \text{Public} \quad (2)$$

Info_Quality represents a [0,33]value that reflects the quality of information disclosure,Admin refers to managerial cost. Fundraising Expense represents all financial cost, Area indicates the economic condition of registration place, Industry represents the sector affiliation of the foundation, and Public indicates the nature of the foundation.

Based on the above rationale and variable selection, as well as reference from previous models, we used the following multiple regression model, (equation 3), to estimate Donation income of Chinese college foundations influence by their relevant financial factors.

$$\ln(\text{Donation})_t = \beta_0 + \beta_1 \ln (\text{FTI})_{t-1} + \beta_2 \ln (\text{Size})_t + \beta_3 \ln (\text{Pub_E})_{t-1} + \beta_4 (\text{Inve_R})_{t-1} + \beta_5 (\text{Inve_E})_{t-1} + \beta_6 \text{Age}_t + \beta_7 (\text{Rev_E})_{t-1} + \beta_8 (\text{Rev_A})_{t-1} \quad (3)$$

Overall, we expect the likelihood of financial reporting factors could be mostly positively associated with the social donation income of the non-public college foundations in China.

3. Empirical results

3.1 Observations and descriptive analysis

Our descriptive analysis reveals the relevant data on all non-public offering college foundations (407) documented in China Foundation center, and complemented data of “Age”from its official website (228 of the 407 college foundations had official website at the end of 2014) or other authorized reports.

Table 3.Descriptive analysis

Variable	Summary Statistics				
	N	Min	Max	Mean	SD
Donation	407	.00	148997.00	1708.31	8686.19
Size	365	135.00	438917.00	6889.68	31159.22
FTI	365	.80	100.00	55.57	19.22
Pub_E	366	.00	57196.00	1074.36	3871.25
Inve_R	407	.00	1.49	.14	.29
Inve_E	407	.00	8.56	.037	.43
Age	407	1	23	6.03	3.77
Rev_E	366	-20.00	1965.00	8.27	102.94
Rev_A	366	-.46	5.56	.54	.63

Missing values of size, FTI Pub_E, as well as zero values of Rev_E,Rev_A are omitted.

Our sample includes 365 usable observations after removing missing values. The analysis indicates that the average age for Chinese college foundations is 6 years, so they are lacking experiences. They also vary significantly in size, expenses and investments. Overall, the investment ratio and returns are pretty low.(See Table 3)

To be consist with prior studies,we take the log of each continuous variable to help normalize the distribution.

3.2 Regression model test results

Table 4 :Regression model result

R	R2	$\overline{R^2}$	SD error	Modified document					Durbin-Watson
				R2	F	df1	df2	F	
.834a	.696	.691	1.12924	.696	136.615	5	298	.000	1.982
a. Predictor variables: (constant), $\ln(\text{FTI})$, Inve_E, Age, $\ln(\text{Rev}_E)$									
ab. Criterion variable:									

Results show that the modified regression model has a reliable basis since the goodness of fit is 0.696, and verified the financial factors that would influence donation income of college foundations despite inconsistent effects. And Durbin-Watson d statistics indicate no significant autocorrelations.

Table 5. Multicollinear analysis result of the model

Model	Non-standardized coefficient		Standardized coefficient	T	Sig.	Multicollinear analysis	
	B	SE	Beta			Tolerance	VIF
Constant	.050	.285		.17	.861		
Age	-.057	.021	-.096	-2.64	.009	.773	1.293
Inve_E	-.281	.131	-.069	-2.15	.033	.997	1.003
Pub_E	.942	.043	.853	22.1	.000	.685	1.460
FTI	.010	.004	.080	2.37	.019	.893	1.120
Rev_E	.074	.007	.326	9.92	.000	.946	1.057

After stepwise regression analysis, final regression model has showed: The multicollinearity analysis have an $VIF < 2$, which signifies no collinear between variables. And Table 4 also confirms the significant correlation between donation income and information disclosure quality, public expenditure, revenue and expenditure ratio, age, investment returns. So these factors may predict the future donation income for non-public college foundations.

3.3 Empirical evidence of hypotheses

In Hypothesis 1 we proposed that Foundation Transparency Index (FTI) would positively associate with social donation income. Through data analysis, we found that it was strongly supported. It is consistent with previous research findings.

In Hypothesis 2 we held that net assets would positively associate with social donation income. We found no obvious relationship between them in our test.

In Hypothesis 3 we assumed that public expenditure would positively associate with social donation income. It turned out that they are highly correlated.

In Hypothesis 4 we predicted that investment ratio will be positively associated with social donation income. But results show there is no correlation between them.

In Hypothesis 5 we proposed return on investments would positively associate with social donation income. Results show that instead of positive effect, return on investments is negatively related to donation income. Although Khanna & Sandeler (2000, [11]) provided evidence of a positive relation between public support and government grants, indicating a crowding-in effect. But some other evidence showed the crowding-out effects for government grants. So did this study.

Alternatively, unlike in the capital markets, where investors seek to maximize monetary returns from their investment, in the contributions market what most donors are looking for is to maximize community impact (Gordon & Khumawala, 1999, [12]). Unlike shareholders, donors do not ultimately benefit from a foundation's strong performance.

In Hypothesis 6 we held that the age of the foundation would positively associate with social donation income. But the statistical tests show the opposite answer as the elder the organization was,

the less donation it would attract. Residual of Age has two special cases, Peking University and Tsinghua University. It could be explained as the brand effect of the two universities has larger influence.

In Hypothesis 7 we assumed the revenue expenditure rate would positively associate with social donation income. Results show they are significantly correlated.

H8: The vitality of the foundation will be positively associated with social donation income. Results show no significant correlation between them.

4. Conclusions and recommendations

This study provides a more-specified model for donations from the perspective of Chinese non-public offering college foundations. The study has showed:

The donation income of Chinese non-public offering college foundation is positively associated with its Foundation Transparency Index (FTI), public expenditure, revenue and expenditure ratio, and negatively influenced by its age and investment returns.

Nonprofit donors do not have unlimited resources and therefore, NPOs must compete for contributions (Petrovits, 2011,[13]). Our results may be of interests to several constituencies including practitioners and related government agencies, so as to enrich their skills to outperform its peer organizations.

Based on the result of this study, strategies for promoting charitable donations are listed as followed:

4.1 Financial information disclosure should be strengthened

Our test result again supports the importance of information disclosure. We should borrow policies from developed countries to form a more advanced compulsory disclosure standard, like US government requiring the NPOs to submit detailed annual informational tax forms as well as Internal Revenue Service (IRS) Forms 990. Also, performance indicators should be introduced and relevant information should be disclosed to the public especially facilitated by official websites and new media so as to show performance accountability to win public trusts. Voluntary disclosure should be encouraged, and third parties are introduced in evaluations.

4.2 Public programs should be carefully designed

Consistent with previous studies, we also revealed positive correlation between public expenditure and donation income. Public programs should be carefully designed so as to show warm light effect of the charitable donations, as well as vitality and potential of the foundations for sustainable development.

4.3 Communication with media are vital

Surprisingly, return on investments negatively influence the donations. Since most donors concentrate on their social impact expansion instead of revenue gained, "longitudinal communication strategies" (Snipes & Oswald, 2010,[14]) could be used to help promote reputation of both college and its donor in case that public advertising directly for college foundation is forbidden.

4.4 Professional and forward-looking strategies are needed

Results show that the age of the foundation has a negative effect on donation, which may be caused by unprofessional behavior. Employers in most Chinese college foundations are hired to do routine work for college and not skilled in foundation management or finance, which would be a disadvantage for further competition. Professional and forward-looking strategies are eagerly needed for sustainable development. Besides, an appealing mission for the foundations would reduce the negative effect of the organization's age (Tinkelman, 1998,[15]).

4.5 Balanced Income & Expenses control be preferred

Keeping a balanced budget, means good record in financial accountability, which may guarantee a sustainable development. And the money may be efficiently used and more resources could be allocated and redistributed in a professional manner.

5. Limitation and future trends

Although this study has sampled on all the available non-public college foundations listed in China foundation center in 2014, there has been little consideration given to understanding the effect of economic environments or the size of alumni and age of the colleges that may be good predictors of the social donation. This study also omits numerous variables because of weak information disclosure environment for Chinese foundation requirement, let alone the difficulties in data-gathering and measurements. But on the other side, real development of Chinese college foundations has been revealed.

Studies that explore and compare the financial influences among Chinese foundations in different industries could be one of the interesting extensions. Panel data analysis would also provide longitudinal perspective on the foundation development and its donation determinants. And empirical study on other influential factors specially based on resource of college and foundation could be of value.

Acknowledgement

This research was financially supported by Youth Social Science Fund of Ministry of Education of China (Grant NO. 15YJC880053)

References

- [1] S.N.Gregory , J. Danicl, and C .Guo, Web disclosure and the market for charitable contrubutions. *Journalof Accounting and Public Policy*, vol.33, pp. 127-144, 2014
- [2] M.Trussel and J.Parsons, Financial reporting factors affecting donations to charitable organizations. *Advances in Accounting*, vol.23, pp. 263-285, 2008
- [3] F.Jacobs and P.Marudas, The combined effect of donation price and administrative inefficiency on donations to US nonprofit organizations. *Finance and Accounting Management*, vol.25, pp. 33–53, 2009
- [4] D.Tinkelman and K.Mankaney, When is administrative efficiency associated with charitable donations? *Nonprofit and Voluntary Sector Quarterly*, vol.36, pp.41-64, 2007
- [5] L.Callen, Money donations, volunteering and organizational efficiency. *The Journal of Productivity Analysis*, vol.5, pp.215–228,1994
- [6] Y. Liu ,et al. The causes and consequences of financial information disclosure quality of charity organizations. *Accounting Research (in Chinese)*, vol.303, pp.76-83, 2013
- [7] L.Amber and B.David, Optimizing engagement: brand identification and alumni donation behaviors. *International Journal of Educational Management*, vol. 28, pp.765-778,2014
- [8] L.Parsons, The impact of financial information and voluntary disclosures on contributions to not-for-profit organizations. *Behavioral Research in Accounting*, vol.19, pp.179-196, 2007
- [9] Z.Liu , Annual Report on Chinas Foundation Development 2014. Beijing :Social Sciences Academic Press, pp.155-165,2015

- [10] A. Weisbrod, and N. Dominguez, Demand for collective goods in private markets: can fundraising expenditures help overcome free-rider behavior? *Journal of Public Economics*, vol. 30, pp. 83–95, 1986
- [11] J. Khanna and T. Sandeler, Partners in giving: The crowding-in effects of UK government grants. *European Economic Review*, vol. 44, pp. 1543–1556, 2000
- [12] P. Gordon and T. Khumawala, The demand for not-for-profit financial statements: a model for individual giving. *Journal of Accounting Literature*, vol. 18, pp. 31–56, 1999
- [13] C. Petrovits, C. Shakespeare and A. Shih, The causes and consequences of internal control problems in nonprofit organizations. *The Accounting Review*, vol. 86, pp. 325–357, 2011
- [14] R. Snipes and S. Oswald, Charitable giving to not-for-profit organizations: factors affecting donations to non-profit organizations. *Innovative Marketing*, vol. 6, pp. 73–80, 2010
- [15] D. Tinkelman, Differences in sensitivity of financial statement users to joint cost allocations: the case of nonprofit organizations. *Journal of Accounting, Auditing and Finance*, vol. 13, pp. 377–394, 1998