

FALLING FINANCIAL SATISFACTION IN A RAPIDLY GROWING CHINESE
ECONOMY: WHAT ROLE DOES EDUCATION PLAY IN DETERMINING FINANCIAL
SATISFACTION?

A Thesis
submitted to the Faculty of the
Graduate School of Arts and Sciences
of Georgetown University
in partial fulfillment of the requirements for the
degree of
Master of Public Policy
in Public Policy

By

Boheng Shao, B.A.

Washington, DC
April 9, 2014

Copyright 2014 by Boheng Shao
All Rights Reserved

FALLING FINANCIAL SATISFACTION IN A RAPIDLY GROWING CHINESE
ECONOMY: WHAT ROLE DOES EDUCATION PLAY IN DETERMINING FINANCIAL
SATISFACTION

Boheng Shao, B.A.

Thesis Advisor: Andreas T. Kern, Ph.D.

ABSTRACT

While disposable income in both rural and urban China has dramatically increased, financial satisfaction declined in the early-2000s and increased slightly in the late 2000s. This paper analyzes the relationship between education and financial satisfaction. The major finding is that financial satisfaction is only positively correlated with education among those at the highest income level while the correlation remains negative among all other income groups. As China's economy has grown, income inequality has become an increasingly important factor in reducing financial satisfaction. While education inequality resulting from unequal distribution and lack of sufficient educational resources has created heavy entry barriers to secondary and post-secondary education, increasing income inequality only compounds the problem. In a country where an education premium exists, failure of education to satisfy people's expectation of future income may ultimately cause social instability and low government credibility. In this spirit, findings of this paper can serve as a prescription for the Chinese central government to improve its ongoing reform, manifest greater socio-economic mobility, and establish a harmonious society

Key words: Financial satisfaction, Income, Perceived income inequality, Relative deprivation, Education

First and foremost, I sincerely thank my professors at the Georgetown McCourt School of Public Policy, particularly my thesis advisor, Andreas T. Kern.

A special thanks to my parents, whose love, encouragement and expectations always support me.

TABLE OF CONTENTS

Introduction and Background	1
Literature Review.....	6
The Easterlin Paradox – economic development does not increase overall happiness.....	6
Later findings on income and SWB.....	7
Education and SWB.....	8
Education and Financial satisfaction	10
Hypothesis and Conceptual Model	12
Data Description	14
Empirical Results	20
Limitations.....	28
Conclusions and Policy Implications	31
Appendix	37
References	42

Introduction and Background

Rapid economic growth has made China the second largest economy in the world. However, GDP and GDP per capita are no longer the golden indicators of economic development as they are incapable of indicating all dimensions of economic activity. Instead, subjective well-being (SWB), which measures people's perceived life satisfaction, has become an important indicator of social development. While a relatively free market economy has resulted in a huge increase in absolute well-being, it is also expected to produce an increase in SWB. However, an increasing number of studies have focused on this issue, the growing consensus is that while the economy keeps growing at an incredible speed, the SWB of Chinese people is decreasing. Researchers have found that roughly 50 percent of SWB reduction in rural China can be explained by decreasing financial satisfaction and this pattern is even stronger in urban areas, where more than 60 percent of SWB decreases come from financial satisfaction (Brockmann, Delhey, Welzel, & Yuan, 2008).

Financial satisfaction measures people's subjective satisfaction regarding their current income status. Generally, financial satisfaction is positively correlated with income level and income level is highly affected by education level. Great economic development in China not only has made people much wealthier, but at the same time, increasing government investment in education development has achieved massive improvement. Disposable income in urban cities increased from 343 Yuan in 1978 to 24,564 Yuan in 2012; in rural areas, disposable income increased from 133 Yuan to 7,916 Yuan in the same period (China's National Bureau of Statistics, 2014). Government investment in education has also grown from 73 million Yuan in 1991 to 2.3 trillion Yuan in 2012 (China's National Bureau of Statistics, 2014). Both income

effect and education effect should have produced an increase in financial satisfaction, but China's experience runs in the opposite direction. For China, a country that seeks to pursue long-term social stability, political credibility, and establish a harmonious society, decreasing SWB as well as decreasing financial satisfaction can be potentially problematic.

In its slogan "Knowledge changes your fate and education changes your life," the Chinese government has granted education a special role in fighting poverty, lowering social inequality, and improving happiness (Liu Q. , 2011). The value of education has been widely accepted and it is believed that an education premium¹ exists in Chinese society. However, increasing social inequality and decreasing life satisfaction have raised concerns regarding the true value of education. For China, whether education can prevent further reduction in financial satisfaction has become crucially meaningful.

While sociologists have theorized on SWB issues, direct empirical research into the relationship between education and financial satisfaction in China is nearly non-existent. This paper will try to fill in this blank by investigating the role of education in affecting financial satisfaction. Using data from three waves of the World Value Survey, I run traditional ordinary least squares (OLS) regressions to, first, establish a basic model of the education-financial satisfaction relationship. Since education reform and economic development have had a huge impact on this relationship in different time periods, I introduce several model specifications accounting for differences across time and income groups to study the relationship in different years and at different levels of the income distribution. The major findings are that education is

¹ According to Magee et al, "The education premium is the ratio of the earnings of university graduates to the earnings of high school graduates (Burbidge, Magee, & Robb, 2002, p.203)." It usually implies that a higher level of education produces higher income.

only positively correlated with financials satisfaction at the highest income level; among all other income groups, education and financial satisfaction remain negatively correlated. The difference can be partially attributed to large scale of social inequality that includes both education inequality and income inequality. The logic trend is explained as follows.

In 1978, the Chinese government implemented a series of reform policies that aimed at fighting poverty and liberalizing the economy. Since then, the Chinese economy has achieved remarkable growth, an average annual growth rate of more than 8 percent per year. When total GDP reached \$8.36 trillion in 2012, China's economy became the second largest in the world. GDP per capita also dramatically increased, from \$314 in 1990 to \$6,091 in 2012 (World Bank, 2013). Benefitting from this economic development, absolute incomes in both rural areas and cities have risen to record highs and fundamental living standards have been comprehensively improved. The average nominal income of the rural population rose from 686 Yuan in 1990 to 7,917 Yuan in 2012. Nominal income of the city population jumped more significantly from 1,510 Yuan in 1990 to 21,986 Yuan in 2012 (National Statistical Bureau, 2013). Rapid economic growth facilitated poverty reduction. The population living on less than \$1.25 a day has decreased from nearly 660 million in 1990 to 157 million in 2009 (World Bank & PovcalNet).

While China's economy grows at an incredible pace, awareness of the importance of education has been enhanced rapidly. Although Chinese culture always valued education, a modern educational system had not been well-established until 1986, when the first Compulsory Education Law was enacted (National People's Congress, 1986). The law made nine-year

compulsory education mandatory for children who are six years and older². Since then, students who attend public school only need to pay a small administration fee instead of tuition. Twenty-six years after the law was enacted, education development has been remarkable. China's literacy rate has increased from 65.5 percent in 1982 to 95.5 percent in 2010³ (World Bank, 2013).

Economic development also provides more resources and opportunities for higher education. In 1999, the National People's Congress approved the Plan of Revitalizing Education in the Twenty-First Century to expand college enrollment. This was a part of the eleventh five-year plan that stressed the importance of prosperity for all and the need to create a harmonious society. As a result, the tertiary enrollment ratio for higher education increased from 3.45 percent in 1990 to 26.5 percent in 2010 (Department of Education, 2011)⁴. Despite the fact that inequality remains high in China's higher education, the value of higher education has greatly appreciated. A bachelor degree has already become a must for urban residents to find a job, and it is also the best chance for rural residents to earn an urban *hukou* (residency).

Urgent demand for the urban *hukou* not only reflects unequal development between urban cities and rural areas; more importantly, it implies a growing perceived social inequality in China. Relatively free markets ensured fast economic growth, but they also generated a negative effect on social development: social inequality has increased. Historically, social and economic development in eastern China are faster than the inland and western parts due geographic

² The nine- year compulsory education includes 5-6 years of elementary education and 3-4 years of middle school education.

³ Literacy rate is the percentage of the population age 15 and above who can read and write.

⁴ Tertiary enrollment ratio is an expression of the percentage of high school graduates who are successfully enroll in university or college.

conditions and policy support. The economic reform in 1978 restructured the economy towards private ownership and more market-based economy. The reform also resulted in the establishment of several special economic zones in south-east China. The logic behind this, which is a part of the Deng Xiaoping Theory, is allowing parts of provinces and people to become rich first, and makes them the driving force to lead economic development in other places (Xinhua News, 2005). While the successful 1978 economic reform that produced remarkable economic growth in east coast China, however, unequal economic development and increased social inequality remained between east and west, and between urban cities and rural villages.

Social inequality and income inequality have increased substantially since the economic reform. The Gini coefficient has grown from 0.23 in 1990 to 0.47 in 2012, having peaked at 0.49 in 2008 (Economist, 2013). As many studies have found a significant positive correlation between education and income level, it has become a common assumption that receiving more education should be able to reduce income inequality, and eventually increase financial satisfaction. However, expanded education development in China has not increased financial satisfaction. The reason may lie in increasing education inequality, high entry barriers, and unequal allocation and insufficient educational resources. If both income inequality and education problems remain unsolved or get worse, failure of education to realize people's expectations of future income may ultimately endanger China's political stability.

Although a large number of studies have focused on the economics of "happiness" in China, the education effects on SWB are only discussed as indirect income effects. However, studies of the direct education-financial satisfaction relationship in China are essentially missing.

To fill this gap in the existing literatures of determinants of SWB, this paper will focus on a specific analysis of the relationship between education and perceived financial satisfaction.

Literature Review

The Easterlin Paradox – economic development does not increase overall happiness

The relationship between happiness and economic development has been studied in the social science field for a long time. Richard Easterlin is the pioneer who first studied the economics of “happiness” and his famous “Easterlin Paradox” is widely used as the foundation for studying income effects on SWB. The “Easterlin Paradox” states that, while richer people are generally happier than the poor, a society’s average happiness level remains unchanged, even when most of the population’s income increases (Easterlin, 1974). According to Brockmann et al, “this paradox can be explained by the ideas of ‘norm adjustment’ and ‘relative advantage’” (Brockmann, Delhey, Welzel, & Yuan, 2008, p. 389). First, norm adjustment refers to the fact that SWB does not increase with improved living standards, because people quickly adapt to increases in absolute income and thus treat the new situation as normal. Second, as people tend to compare their social standing to their peers, improvements in income compared to the respective peer group will lead to a positively perceived ‘relative advantage’. (Brockmann, Delhey, Welzel, & Yuan, 2008). For this reason, increases in aggregate income do not automatically lead to increases in society’s aggregate happiness.

Later findings on income and SWB

In contrast to Easterlin, more recent studies have found both positive and negative associations between income and SWB. Clark, Frijters, and Shields (2007) provided a comprehensive review of the relationship between income and subjective well-being. Their results generally suggest a positive effect of income, but the effect has a diminishing return at high-income levels. In other words, SWB rises with income growth, but an additional gain in income has a smaller effect on high-income groups' perceived happiness. This finding can be explained by Easterlin's later finding that absolute income matters up to certain level, after which relative income differences matter more (Easterlin, 1995, 2006).

The effect of relative income on SWB has also been demonstrated by many other studies. These can be divided into two large groups – one focuses on aspiration for future income; the other emphasizes reference groups. People, who subscribe to in the aspiration of future income theory believe that whatever someone has achieved becomes their norm of expectation. And high aspirations and expectations of future income have a negative effect on SWB (Macdonald & Douthitt, 1992; Meier & Stutzer, 2006). The importance of aspirations reinforces findings that perceptions of financial status are more effective than actual income (Haller & Hadler, 2006; Johnson & Krueger, 2006). These findings also confirm the basic SWB theory that the rich are happier than the poor. But they also imply that individuals who are at high levels of income are unlikely to increase SWB if their income gain is less or equal to their expectations.

Different from the aspiration theory, the other group of studies argues that the negative effect on SWB is driven by a reference group comparison. The famous “Frustrated Achievers” concept is a typical example of the aspiration theory. The concept was drawn from the relative

deprivation concept, which was introduced by Merton and Kitt in 1950. The basic idea argues that people compare themselves to a reference group when evaluating their own positions of well-being (Merton & Kitt, 1950). According to these authors, people tend to consider themselves as disadvantaged in comparing themselves to others, particularly those who are in better positions. Additional income can have a negative effect on SWB if those relevant comparison groups also gain a similar or larger increase in income (Dorn, Fischer, Kirchgassner, & Sousa-Poza, 2007; Luttmer, 2005). In contrast, people who are in better positions enjoy their relative advantages and appear to be happier.

Although the phenomenon that the rich are happier than the poor still holds in China (Brockmann, Delhey, Welzel, & Yuan, 2008), overall SWB did not increase with rising absolute income. Among existing studies, the concept of “Frustrated Achievers” so far provides the best explanation. In 2008, Brockman, Delhey, Welzel and Yuan applied the “Frustrated Achievers” concept to explain the puzzle in the relation of Chinese economic development and “happiness”. While a rapidly growing economy has increased income for most of the Chinese population, income inequality enlarged. Consequently, most income groups find themselves disadvantaged in relative to China’s overnight millionaires, which in turn depresses their life satisfaction.

Education and SWB

In addition to the income effect, existing studies have also pointed out that education, health, sex, age, race, and marital status also affect SWB as well. According to Easterlin, while the association of SWB with income is the most pervasive, a positive association between

happiness and years of schooling is the firmest (Easterlin, 1974). Some recent empirical studies have found a positive relationship between education and SWB (e.g., Blanchflower & Oswald, 2004). Other studies provide evidence that education has more of a positive impact in low income countries (Fahey & Smyth, 2004; Ferrer-i-Carbonell A., 2005). Still others find no significant relationship between education and SWB (e.g., Clark, 2003).

The coefficient on education is often responsive to other variables in the model. For example, education is likely to have a positive association with income and health (Dolan, Peasgood, & White, 2008). Therefore, the positive education-SWB relationship may be attributed to income or health effects instead of education effects. Clark and Oswald (1996) find that SWB declines with higher education, holding income constant. Their explanation is that higher education induces higher aspirations. Higher education groups' SWB decreases when they fail to fulfill their aspirations (Clark & Oswald, 1996). However, the inclusion of additional control variables that are correlated with education raise additional complication in estimating the direct effect. For instance, if education and income are positively correlated, including income as control variable will likely underestimate the actual magnitude of the education premium on financial satisfaction.

Whether higher education will bring greater SWB in China has become an empirical issue. Given that education has a positively correlation with health and income, it would be ideal to include these effects in model estimating educational impacts on SWB. The idea that education affects SWB through health has been explored in the U.S. and Sweden (Bukonya, Gebremedhin, & Schaeffer, 2003; Graham & Pettinato, 2001). The indirect effect of education on SWB via income and saving is also found by Lam and Liu (2013) in China. According to

these authors, income, saving, and education together explain more than half of the variation of SWB (Lam & Liu, 2013). All these findings imply that education effects on SWB may be positional instead of absolute.

Education and Financial satisfaction

Rather than looking at the indirect effect of education on SWB, this paper will analyze the direct effect of education on financial satisfaction. Besides regular determinants of SWB, existing studies also find that SWB in China has become primarily dependent on financial satisfaction, which is called the “monetization of happiness”. The direct effect of education on financial satisfaction will include effects of income, health, and saving due to their strong correlation with education. Some studies indicate that nearly 49 percent of SWB in rural China can be explained by financial satisfaction, and the percentage is more than 60 percent in urban China (Brockman, Delhey, Welzel and Yuan, 2008). Moreover, a free-market economy has made China a capitalist country, where money matters in all aspects of life. Education has always been the primary manner to increase income in China. Therefore, the analysis of education’s effect on financial satisfaction helps identify the true effect of education on Chinese SWB.

Comprehensive financial satisfaction analysis is generally missing in mainland China. However, a small number of studies have been conducted in Hong Kong, Taiwan and other parts of the world. Their findings are surprisingly similar across time and space. A positive and significant relationship between financial satisfaction and life satisfaction (or SWB) has been

found in many studies (e.g. Van Praag & Kapteyn, 1973; Chou & Chi, 2002; Joo & Grable, 2004; Li, Chi, & Aranda, 2007; Delhey, Brockman, Welzel & Yuan, 2008). Education is found to have a mixed effect financial satisfaction that varies with social class and income level (Vera-Toscano, Ateca-amestoy, & Serrano-del-rosal, 2006). According to Vera-Toscano's findings, education is generally positively correlated with financial satisfaction in Spain, while only the secondary education coefficient is statistically significant. This implies that there must be other factors that are more determinative than the education effect. Moreover, marginal education effects are much stronger for lower income groups and social classes, than for those at higher level.

In sum, literature on financial satisfaction in mainland China is quite limited. Current studies of financial satisfaction are limited to elders or minority groups. Analysis of the general public is nearly non-existent, which leaves a huge blank to fill in. This paper seeks to enrich the literature on the education-financial satisfaction relationship. Moreover, outcomes of this study will also contribute to efforts to estimate the true effects of education on SWB in China. If a significantly positive education-financial satisfaction relationship is discovered, it implies that financial satisfaction-related social issues, such as perceived income inequality, can be well controlled through promoting education. Thus, education will become a key player in establishing a harmonious society, and future policymaking might need to favor education-focused policy.

Hypothesis and Conceptual Model

Previous studies have found a positive correlation between education and financial satisfaction that varies with perceived social class and income level (Vera-Toscano, Atecamestoy, & Serrano-del-rosal, 2006). However, there are almost no studies that undertake comprehensive empirical research on China, and it is necessary to verify that such a positive relationship also exists. Existing literature shows that education is positively correlated with life satisfaction in China (Lam & Liu, 2013). And since more than 50 percent of life satisfaction can be explained by financial satisfaction (Brockmann, Delhey, Welzel & Yuan, 2008), it is reasonable to expect a positive education-financial satisfaction relationship exists in China, which leads to my key hypothesis:

Financial satisfaction increases with education, other things being constant

This study of falling financial satisfaction in China uses a number of different model specifications that build on one another and provide comprehensive interpretations of the relationship between education and financial satisfaction. The following general specification will be used to represent the financial satisfaction of individuals:

$$\text{Financial Satisfaction} = f(X,e)$$

where X is the vector of explanatory variables of financial satisfaction and e is the error term.

This approach is generally used in research on life satisfaction. Although each person has his or her own definition regarding financial satisfaction, in practice the kinds of things that determine how satisfied a person feels are for most people very similar. These characteristics fall into three large groups – material circumstance, family concern and personal factors (Easterlin, 2001). In my study, material circumstance will be determined by *income level, saving and perceived*

income inequality; family concern is measured by *the number of children a household has*; and personal factors will include *education, age, life satisfaction, marital status, rural or urban residence, health, gender, perceived social class, and employment status*. The relative significance of these factors varies over a lifetime, and is likely to be affected by gender and regional (rural vs. urban) differences.

My analysis first uses the basic model to measure the direct effect of education on financial satisfaction. Education is measured in categories using survey respondents' highest education level. As a result of several major education reform in the past two decades, there are large numbers of respondent in all categories, which allows to see how financial satisfaction varies at different education level. The coefficient on the financial satisfaction by education interaction term represents how much financial satisfaction is actually associated with an additional level of education. To avoid omitted variable bias in different regions and years, both time fixed effects and regional fixed effects will be included.

The relationship between education and financial satisfaction can significantly vary across years. Therefore, a year specification model will be used to test education's effects on financial satisfaction in each survey year. Not only will unobserved factors be controlled, but the model also will allow effects of education to vary in different years. The coefficient of education will reflect the social value of education in different periods. Regional effects will continue to be fixed due to the substantial difference between rural and urban areas. Moreover, since income level is one of the most important control variables in this study because it is significantly correlated with both financial satisfaction and education. The relationship between education and financial satisfaction by different income levels will be tested in an income specification model.

Regional and time effects will be fixed to control unobserved factors that vary over time and across locations.

Data Description

Following existing literature that studies the economics of “happiness” in China, this paper uses the World Value Survey (WVS) data to analyze the education-financial satisfaction relationship. Data are pooled from the 1995, 2001 and 2007 World Value Survey that collects data from individuals in both rural and urban China. The survey design is constant from wave to wave and allows me to analyze the same variables over time. The survey collects data on basic socio-economic and demographic characteristics for respondents and their families, including family income, education, gender, self-rated health condition, saving, perceived life satisfaction, perceived social class, subjective income inequality, employment status, as well as many other categories. The 1995 wave covers about 1500 households, the 2001 waves covers approximately 1000 households, and the 2007 wave covers more than 2000 households. The total population size that used in my analysis is 4515. These data are publicly available through the World Value Survey website.

The analysis sample covers a population aged between 18 years old and 87 years old. The relatively large age range allows me to explore how education affects financial satisfaction in different years, when education policy and social understanding toward education were different. As the WVS does not provide direct information on respondents’ residences, I derive the urban-rural distinction based on occupation and sampling points. People who fall into the “Agricultural workers” and “Farmer: has own farm” categories are treated as rural residents and others are

automatically treated as urban residents. People who respond as “Never had a job” are most likely to be students and unemployed persons and they are cross-checked with their sampling point. People who come from village-level units are treated as rural residents and people who come from country and city level are treated as urban residents. As a result, 802 people are treated as rural residents in 1995, 560 in 2001 and 1091 in 2007.

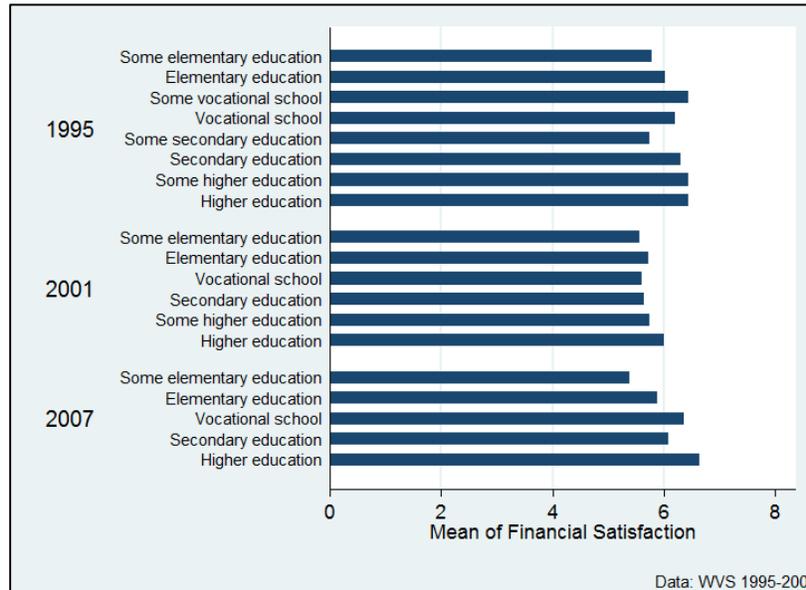
Table 2 in the Appendix lists the descriptive statistics for observations used in my model. As expected, financial satisfaction, life satisfaction, income level, perceived income equality and education have the largest standard deviations. At a mean of 5.93, people in China on average merely accept their financial status. However, the standard deviation indicates that there are large discrepancies on the perceived financial satisfaction. Given that financial satisfaction is positively correlated with income level, the large range in financial satisfaction can be explained by income inequality. The mean of income level indicates that most people considered themselves at mid-low income level (2,000- 6,000 Yuan/month), but the high standard deviation implies a huge gap exists in income distribution.

Average education level in the dataset appears to be at a low level. At mean of 1.58, survey respondents’ average education level is between elementary education and vocational education. It is not surprising to see such a low average education level. On one hand, the entire education system was suspended during the 1966-1976 Cultural Revolution and nearly all enrolled middle school and high school students went to countryside in response to the “Up to the Mountains and Down to the Countryside Movement” (Yu, 2006). Consequently, most of these youth basically lost their chances for pursuing higher education. On the other hand, the nine-year compulsory education did not become mandatory and tuition-free until 1986 and the higher

education expansion did not take place until the late 1990s. The age mean implies that most survey respondents are aged between 30 to 50 years old, and it is highly possible for them not to be benefited from these education reforms. In addition, existing education inequality, particularly between rural and urban areas, may also contribute to the mid-low average level of education. I speculate that younger generations will have much higher levels of education.

Besides a positive correlation between education and financial satisfaction, two other insights can be drawn from Figure 1 below. First, higher education generates higher financial satisfaction. Although financial satisfaction for more highly educated people decreased from 1995 to 2001 (also see Table 3a in the Appendix), it could be because massive job losses from the economic reform generated huge negative income effects that outweighed the education effects. Starting from the mid-1990s, the Chinese started privatizing state-owned factories, and consequently, a large number of workers were forced to retire with minimum wages (Li, Hu, & Hong, 2001). As most of these workers learned their skills either from vocational schools or from work, lack of other skills and learning ability limited their opportunities to be reemployed. Since then, the value of vocational and technical schools have depreciated and it has gradually become a social norm in China that higher education graduates have higher social status.

Figure 1: Perceived Financial Satisfaction Mean (by Education Level) 1995-2007 China



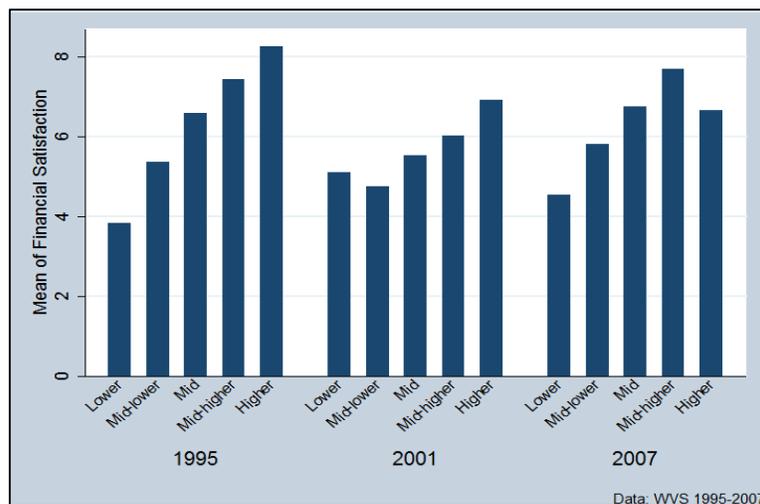
Secondary schools now brings higher financial satisfaction. The decrease in 2001 resulted from a combined effect of economic and higher education reform as discussed above. However, the value of secondary schools has been revived in China as a result of the fact that: service industries are rapidly growing. The free market economy leads to diversified service industries and related technical and vocational schools have become popular alternatives to regular high schools in recent years (The World Bank, 2012). “During the 21 years between 1980 and 2001, the proportion of regular senior high school students among all the students in senior secondary education has decreased from 81% to 54.7%, while the proportion of secondary vocational school students has increased from 19% to 45.3%” (Ministry of Education of the People’s Republic of China, 2006).

Higher education reform has lowered barriers to enter universities and colleges, but it has also resulted in a sudden expansion of higher degree owners in job markets. In contrast, factories and many other skill-orientated service industries confront a shortage in labor supply.

Consequently, technical and vocational school graduates, who are equipped with certain unique skillsets, have much higher chance in successful job-hunting compared to regular university graduates. This can explain why secondary school graduates have a higher financial satisfaction mean in 2007.

From Figure 2, a positive relationship between financial satisfaction and income can be observed, except in 2007. Overall decrease in financial satisfaction from 1995 to 2001 might be attributed to the combination effects of the 1997 Asian financial crisis and domestic economic reform that resulted in millions of state-owned factory workers losing their jobs (Li, Hu, & Hong, 2001). However, overall financial satisfaction among high income level people has constantly decreased (see Table 3b in the Appendix), which contradicts the basic theory that richer people are generally more satisfied with their financial situation. The reason may lie in the fact that income effects on financial satisfaction may have diminishing returns. Therefore, when income reaches a certain level, the effect of other factors exceed the pure income effect and dominate financial satisfaction.

Figure 2: **Perceived Financial Satisfaction Mean (by Income Level) 1995-2007 China**



The correlations between key variables (Table 3 in the Appendix) display some useful guidance for the next step of research. The estimate that financial satisfaction explains nearly 60 percent of life satisfaction is again confirmed here. As expected that positive correlations between financial satisfaction and income level, education, health condition, and saving are found at this stage. However, it is surprising to see such a negative correlation between perceived social class and financial satisfaction.

In a country that sees saving as an indicator of wealth, the fact that an increase in saving leads to a growth in financial satisfaction can lead to meaningful findings. As saving also has a positive correlation with education (Table 3), it seems that highly educated individuals earn more financial satisfaction through saving. The reason may lie in the fact that more education provides more financial knowledge so that these people would prefer saving to investment in China's immature financial market. As Grable and Lytoon (1999) and Roszkowski (1998) both concluded, more financial knowledge allows people to make different financial decisions, which may lead to greater levels of financial satisfaction (Grable & Lytton, 1998 & Roszkowski, 1999).

Education itself is positively related to financial satisfaction, although the magnitude is relatively small. However, there is a significant negative correlation between education and the rural dummy, which implies substantial differences between rural areas and urban areas. Lower average education levels in rural area leads to lower income levels, which will result in lower financial satisfaction. In contrast, lower education and limited access to financial markets lead rural residents to save more, which may generate two effects: first, since rural China is more traditional and put greater emphasis on saving, lower investment may actually increase rural residents' financial satisfaction; and second, in contrast, lower education level may result in

lower income level and awareness of being in a relatively disadvantaged financial position may ultimately lead to a decrease in financial satisfaction.

Empirical Results

I use multivariate regressions to test the conclusiveness of descriptive findings in the previous section. OLS regression models are run simultaneously to estimate the impact of education on financial satisfaction. I also control for life satisfaction, subjective income equality, perceived social class, gender, age, self-rated health, income level, number of children in the family, family saving, marital status, and employment status. Both region and year fixed effects are included to control for time invariant and regional specific effects. The results of my basic model are presented in Table 4 below.

Model 1 only includes the dependent variable and the key independent variable. As expected, education is positively associated with financial satisfaction, and the relationship is also statistically significant at the one percent level. However, the education-financial satisfaction relationship changes its sign when social factors, such as life satisfaction, perceived income inequality, and subjective social class are controlled for (Model 2). Thus, Model 1 must suffer from omitted variables resulting in a positive bias. Also, although the impact of education on financial satisfaction becomes negative, the magnitude is relatively small and is statistically insignificant.

Table 4: Financial satisfaction for China

VARIABLES	model 1	model 2	model 3	model 4
Education level (recoded)	0.298***	0.0474	-0.103*	-0.101
	-0.0599	-0.0458	-0.0536	-0.0557
Satisfaction with your life		0.624***	0.598***	0.593***
		-0.0141	-0.0155	-0.0323
Income equality		-0.206***	-0.186***	-0.210*
		-0.0616	-0.0624	-0.0504
Social class (subjective)		-0.478***	-0.322***	-0.298
		-0.0355	-0.039	-0.133
Sex			-0.122**	-0.12
			-0.0612	-0.056
Age			0.0820***	0.0744
			-0.031	-0.0428
State of health (subjective)			0.112***	0.103*
			-0.0347	-0.0282
Scale of incomes			0.248***	0.315
			-0.0373	-0.112
How many children do you have			-0.0582*	-0.0572
			-0.0301	-0.0437
Family savings during past year			0.357***	0.319***
			-0.0661	-0.0302
Marital status			-0.15	-0.129*
			-0.092	-0.0425
Employment status			-0.157*	-0.142
			-0.0806	-0.13
Rural			-0.0974	-0.0822
			-0.0706	-0.0405
Fixed Effects				Yes
Constant	5.453***	3.425***	2.333***	2.136
	-0.106	-0.204	-0.303	-0.915
Observations	4,416	4,372	4,099	4,099
R-squared	0.005	0.442	0.466	0.466

Dependent variable: financial satisfaction 1-10 (high)

Data: WVS China 1995, 2001 and 2007

*** p<0.01, ** p<0.05, * p<0.1

Compared to education, financial satisfaction explains more than 60 percent of life satisfaction (in Model 2), which is consistent with Brockman, Delhey, Welzel and Yuan's finding in 2008. The reason lies in the high correlation between the two variables. Moreover, perceived social class and subjective income equality also play vital roles in affecting financial satisfaction. Without controlling for other personal factors, perceived social class and subjective income equality may capture a large portion of income effects, and result in high significance and magnitude. At the same time, they also reflect existing issues in Chinese society, such as unequal income distribution, and might give a hint to alleviate current challenges concerning social mobility.

Model 3 includes a set of demographic control variables in order to control for individual level effects. The increased significance and magnitude of the education coefficient also supports the conclusion that previous models suffer from omitted variable bias. While life satisfaction, perceived income equality, and social class remain in strong association with financial satisfaction, personal factors make a great contribution to the education-financial satisfaction relationship. Income and saving together show a dominant income effect on perceived financial satisfaction. The reason why saving has such power can be attributed to both traditions and an immature financial system. As Chinese society has always valued saving as a part of welfare, it is unsurprising that saving is positively associated with financial satisfaction (Chamon & Prasad, 2008). Moreover, the Chinese financial market system is relatively new and immature. Rather than risking to invest money in the financial market, people are more willing to do regular saving, which is consistent with Chamon and Prasad's precautionary savings argument (Chamon

& Prasad, 2008). But this phenomenon is expected to change with a gradual opening of China's financial policies and capital markets.

In order to control for potentially omitted variables that vary with time and region, both regional and time effects are fixed in Model 4. The coefficient on education becomes statistically significant while life satisfaction, income, and saving remain statistically significant at the one percent level. In general, self-rated health condition is positively correlated with financial satisfaction. Older people and females feel more satisfied with their current income status. These findings are consistent with Dolan, Peasgood, and White's findings in 2007. However, different from the majority of findings, marital status and the number of children in the family are negatively associated with financial happiness. This could be because most researchers use them as controls for estimating relationship with subjective social well-being (SWB) instead of financial satisfaction. It is most likely that getting married and having children will increase SWB, while they will also increase living costs. Consequently, the negative correlation between perceived financial satisfaction and marriage or having children becomes reasonable. Potentially, it also reflects a short coming in social policy, such as support for families, and this will be an interesting topic for future research.

To estimate the change of the effect of education on financial satisfaction in different survey years, I established year separated models (Table 5). The results are basically consistent with the results of the previous models. The education effect remains negative, but its magnitude has increase in the absolute term. More negative effect has been generated by getting high education in 2007 than earlier reflects a declining value of Chinese education. On the one hand, the unbalanced growth of student body size and availability of jobs may be one of the reasons.

On the other hand, this finding is consistent with the “Frustrated Achievers” theory, which states that higher income leads to higher future income expectations. However, the rapidly increasing number of college graduates entering job markets as a result of college expansion in the late 1990s has lowered average income (Yeung, 2011). According to China’s national annual statistic report, college and university graduates increased from roughly 400,000 in 1998 to 3,030,000 in 2012 (China's National Bureau of Statistics, 2014). As initial income expectation are rarely realized, financial satisfaction decreases.

Furthermore, Table 5 shows that the income effect has declined from 1995 to 2007 while the influence of income equality and subjective social class has increased. This confirms Easterlin’s theory that absolute income matters up to certain level, after which relative income matters more. And in the Chinese case, perceived income equality and subjective social class have become more important for financial satisfaction, as well as SWB. The coefficient of self-rated health status has also increased in the absolute term, which implies both an increased awareness of the importance of health and a costly healthcare system. This can also partially explain why having children generated a more negative impact on financial satisfaction in 2007 than it did in 1995. The opportunity cost of having children has significantly increased since 1995. Beside expensive medication, fast growing living and education costs also contribute to declining financial satisfaction. It is clear that great economic achievements have made China a more capitalized society, in which money matters to a certain level, then relative income effects become more important to financial satisfaction.

Table 5: Financial satisfaction for China (by year)

VARIABLES	1995	2001	2007
Education level (recoded)	-0.0653	-0.103	-0.277***
	-0.0769	-0.132	-0.103
Satisfaction with your life	0.618***	0.633***	0.508***
	-0.0255	-0.0357	-0.0324
Income equality	-0.148	-0.224	-0.292**
	-0.0917	-0.148	-0.119
Social class (subjective)	-0.0759	-0.403***	-0.464***
	-0.0545	-0.102	-0.0899
Sex	-0.111	-0.313**	-0.0184
	-0.0935	-0.141	-0.115
Age	0.0297	0.0952	0.164***
	-0.0494	-0.0828	-0.0579
State of health (subjective)	0.0719	0.263***	0.119*
	-0.0543	-0.077	-0.0678
Scale of incomes	0.480***	0.144*	0.412***
	-0.0714	-0.0783	-0.0877
How many children do you have	-0.0011	-0.0118	-0.107**
	-0.0506	-0.0799	-0.0544
Family savings during past year	0.342***	0.430**	0.231*
	-0.0966	-0.167	-0.128
Marital status	-0.0331	-0.224	-0.340**
	-0.136	-0.214	-0.165
Employment status	0.0374	0.0636	-0.106
	-0.135	-0.195	-0.142
Rural	-0.149	-0.15	-0.198
	-0.104	-0.179	-0.139
Constant	0.679	1.736**	3.513***
	-0.434	-0.735	-0.618
Observations	1,379	779	1,235
R-squared	0.553	0.507	0.432

Dependent variable: financial satisfaction 1-10 (high)

Data: WVS China 1995, 2001 and 2007

*** p<0.01, ** p<0.05, * p<0.1

Although relative income effects may be more crucial in modern China, the rule of thumb still appears to hold that higher income groups are generally more satisfied with their financial status and feel happier than low and middle income households. In order to understand how the education-financial satisfaction relationship varies among different income groups, I established an income specification model. Compared with my previous models, the dependent variable, key independent variables and all other controls remain unchanged, and both time and regional effects are fixed.

The income specification model (see Table 6 below) presents a slightly different story than previous models, especially for the highest income group. The education-financial satisfaction relationship remains negative, as expect for the highest income group. Education inequality may play a key role here. Although the implementing of nine-year compulsory education and the expansion of higher education have greatly reduced education inequality, especially gender inequality. Regional inequality and social class inequality remained high (Chen, et al., 2013). Compared to urban areas, rural youth are nearly 30 percent less likely to attend either vocational or academic high school (Yeung, 2011). High tuition fees for high school education and the *hukou* system both generate huge entrance barriers, especially for rural students. Moreover, research finds that father's education, occupation and party membership are also positively correlated with the probability that youths will attend high school and college (Yeung, 2011). This produces a great policy implication that lowering entry barriers for high school as well as college will contribute to education inequity reduction and may be able to generate greater financial satisfaction.

Table 6: Financial satisfaction for China (by income level)

VARIABLES	Low	Mid-low	Mid	Mid-high	high
Education level (recoded)	-0.177	-0.017	-0.131***	-0.238	0.253
	-0.261	-0.234	-0.00937	-0.168	-0.214
Satisfaction with your life	0.548***	0.556***	0.637***	0.644***	0.414
	-0.0266	-0.0369	-0.0352	-0.0177	-0.276
Income equality	-0.113	-0.312**	-0.181*	-0.194	0.452*
	-0.286	-0.0683	-0.0445	-0.143	-0.14
Social class (subjective)	-0.325	-0.309*	-0.185	-0.267	-0.257
	-0.156	-0.0962	-0.138	-0.124	-0.21
Sex	-0.0213	-0.234	-0.09	-0.125	0.321
	-0.0714	-0.123	-0.0764	-0.0575	-0.308
Age	-0.0257	0.153**	0.0675	0.0951	0.152
	-0.0995	-0.0257	-0.0585	-0.0646	-0.184
State of health (subjective)	0.123***	0.155***	0.0519	0.134	0.107
	-0.0081	-0.0126	-0.0259	-0.115	-0.128
How many children do you have	0.0416	-0.0722	-0.0390**	-0.115	-0.0719
	-0.103	-0.0874	-0.00895	-0.0433	-0.15
Family savings during past year	0.00357	0.576*	0.253**	0.258	0.33
	-0.0913	-0.19	-0.039	-0.226	-0.167
Marital status	0.25	-0.328***	-0.206*	-0.0165	-0.417
	-0.153	-0.0247	-0.0686	-0.203	-0.789
Employment status	-0.312	0.173	0.0369	-0.307	-0.19
	-0.128	-0.291	-0.122	-0.11	-0.499
Rural	-0.411	-0.0295	-0.116*	-0.0683	0.422
	-0.298	-0.12	-0.0284	-0.173	-0.771
Fixed Effects	Yes	Yes	Yes	Yes	Yes
Constant	2.858	2.54	2.603**	2.971*	3.597
	-1.267	-1.172	-0.484	-0.698	-1.312
Observations	574	1,046	1,370	667	106
R-squared	0.39	0.392	0.397	0.439	0.275

Dependent variable: financial satisfaction 1-10 (high)

Data: WVS China 1995, 2001 and 2007

*** p<0.01, ** p<0.05, * p<0.1

Not only is the education-financial satisfaction relationship for the highest income group different from others, but their attitudes regarding perceived income equality and saving are different as well. While all other income groups feel more financially satisfied when income inequality is small, the highest income group presents an opposite perspective. The reason may lie in the relative income effect theory that people feel financially satisfied when they are in a better position comparing to others. Perhaps, when income inequality is larger, the highest income group will obtain a higher perceived advantage, and therefore, feel more financially satisfied. The education-financial satisfaction relationship in general appears to be negatively correlated, while the highest income group shows different opinions in many cases. Life satisfaction, income level, subjective social class, perceived income inequality, self-reported health status and saving all play key roles as expected. However, it is unexpected to see that being married, having children, and being a male have such large negative correlations with financial satisfaction.

Limitations

This paper has discovered a negative relationship between education and financial satisfaction, but several limitations still hold that may reduce the robustness of the results. The most crucial limitation is that reverse causality cannot be excluded, and no causal relationship between financial satisfaction and education can be concluded. Other limitations include lack of available data, model limitations, omitted variable bias, and unobservable education effects. Some of these limitations have been overcome, while others need to be solved by further research.

The most substantial limitation of this research lies in the fact that reverse causality cannot be excluded. Income level is positively correlated with both financial satisfaction and education. It has been a common assumption that higher education leads to higher income, and ultimately results in higher financial satisfaction. This paper, however, has estimated a generally negative education effect on perceived financial satisfaction, which breaks with common understanding. Nevertheless, the reverse causality is also understandable and explainable. Perhaps, youths from wealthy background, who have already had high financial satisfaction, do not need higher education as they can simply make living by succeeding in their family business. Consequently, the reverse causality generates the issue of endogeneity, which does not allow me to conclude a causal relationship between education and financial satisfaction.

A second limitation is that this analysis used the World Value Survey (WVS) data from 1995, 2001 and 2007 data waves and only included respondents' highest education level. These data only cover roughly ten-year variations in the education-financial satisfaction relationship. Since 2001, education in China has achieved further development and a large number of students have chosen to pursue education overseas. From 2007 to 2012, graduates from regulation colleges and universities increased by more than 30 percent and the number of Chinese students overseas nearly tripled (China's National Bureau of Statistics, 2014). Hence, education in these five years may have different an effect on financial satisfactions.

Whether obtaining a degree from foreign university generates greater financial satisfaction can be politically significant. On one hand, it has been widely acknowledged that top foreign university degree owners are better trained and educated compared to average Chinese college graduates. The central government has started attracting oversea Chinese elites to work

in China and a series of policies that favor these elites have been enacted (Xinhua News, 2009). This raises questions regarding China's education quality, especially in higher education. On the other hand, if a foreign university degree produces more financial satisfaction, it also becomes meaningful to analyze where the additional financial satisfaction comes from? Whether it is caused by better education, or it is actually a result of stronger family and financial background play more important role, the results will provide meaningful policy implications in countering social, income, and education inequalities.

A further limitation is that variables that indicate respondents' *hukou* or residencies are unavailable. I expected to see difference between rural and urban residency in terms of education quality, health status and many other social and personal characteristics. Although fixed effect models can eliminate bias that varies with time and region, the results can only remain robust at the national level. Even though, the WVS dataset contains regional data, the regional dummy only exists in the 2007 wave data. It would be ideal if the data tracked the same survey respondents over time. The China General Social Survey (CGSS) does provide similar intergeneration data, but the data are currently unavailable. If intergeneration data are used, potential parental effects on the education-financial satisfaction relation can be better analyzed. Consequently, variations of the education-financial satisfaction relationship in different regions remain unclear. It requires more detailed data and future studies to have a clear understanding of these differences among different regions.

Similar limitations have been confronted by studies on the economics of happiness, but the lack of prior research on the education-financial satisfaction relationship results in fewer references. As a result, this paper can only follow existing studies on life satisfaction and social

well-being. The linear regression model has been widely used in these studies, and this paper runs separate linear regressions under specific year, income groups, and a combination of both. The results are generally consistent with the basic model, which suggests that the negative correlation between education and financial satisfaction is robust.

Nevertheless, the coefficient on education is sensitive to the inclusion of other variables. The education coefficient implies a positive relationship between education and financial satisfaction in the basic Model 1. However, after adding social and personal characteristics in the model, the coefficient become negative. Without these controls, the estimation suffers from omitted variable bias. However, inclusion of variables correlated with education as controls brings further concerns. For instance, if higher income has a causal relation with education, then fully controlling income will underestimate the true education impact on financial satisfaction. Therefore, although fixed effects models can pick up some unobservable variations, they are unable to determine a causal relationship between education and perceived financial satisfaction in this study.

Conclusions and Policy Implications

Rapid economic development in China has enabled massive improvement in all aspects of living and with GDP per capita and disposable income in both rural and urban areas are growing substantially, financial satisfaction is expected to have a constant increase. However, financial satisfaction in China experienced a reduction from 1995 to 2001 and a slight rebound from 2001 to 2007. While decreasing financial satisfaction can partially be explained by the “Frustrated Achiever” concept and other relative income effects, higher education is expected to

lead to higher levels of financial satisfaction. In China, where an education premium⁵ has been widely recognized, it is common to assume that more education produces higher income, and eventually leads to greater financial satisfaction. Unfortunately, this paper finds a negative correlation between education and financial satisfaction. The failure for education to generate greater financial satisfaction raises questions regarding negative aspects of China's education development, including education inequity, high entry barriers, and unequal distribution and insufficient educational resources.

Education development in China has achieved great improvement, while regional education inequality and entry barriers both remain high. Nearly two decades after the enactment of nine-year compulsory education, regular middle school graduates have increased (from 10.5 million to 16.6 million from 1986 to 2012), and regular high school graduates have grown from 2.24 million to 7.91 million in the same period (China's National Bureau of Statistics, 2014). Improvement at each level of education is remarkable. However, improvement among different levels is insignificant. Nearly 8 million or half of middle school graduates do not enter high school and this gap has not been substantially reduced since 1986⁶. The same issue occurs in higher education as well. In 2012, only 3.74 million high school graduates were able to attend academic universities and the gap between high school graduates and universities enrollments has been greatly reduced by college expansion in late 1990s. And since research has concluded that education inequality in rural China is much higher compared to urban cities, it is therefore reasonable to assume that most of these 8 million middle school graduates and 3 million high

⁵ See note 2 for the definition of education premium.

⁶ In 2012, the academic high school (excluding technical and vocational institutions) enrollment quota was 8.44 million and the academic university (excluding technical and vocational institutions) enrollment quota was 3.74 million (China's National Bureau of Statistics, 2014).

school graduates, who are unable to continue for further academic education, come from the rural side⁷. The major driving force for the regional inequality may be high entry barriers and insufficient educational resources.

The implementation of nine-year compulsory education and higher education expansion have lowered the entry barriers for elementary, middle school and higher education. However, high school education has been excluded from these reforms. The law has made elementary and middle school education not only mandatory, but also tuition free. Moreover, college expansion has rapidly increased enrollment quotas⁸, which provides more opportunity for youths from different family backgrounds to attend higher education. However, these reform has not resolved the root of the disadvantages of rural youth – *hukou* origin. The fact that students can only take high school and university entrance exams where their *hukou* are located has kept many rural middle school graduates from further education (Chen, et al., 2013). Moreover, as high school and higher education do not belong to the compulsory education category, prohibitively high tuition fees and limited financial aid resources have also contributed to the entry barriers (Liu, et al., 2009). High school attendance has become a bottleneck for a large portion of the population, especially rural residents.

Besides the *hukou* system, insufficient and unequal distribution of educational resources, especially for higher education, have only increased the problem. More than 7 million students graduated from high school in 2012 and there are only 2,442 universities that are able to enroll

⁷ Rural youths have a smaller chance (about 30 percent) of attending either vocational or regular high school (Yeung, 2011).

⁸ The academic university enrollment quota increased from 0.63 million in 1998 to 3.74 million in 2012 (China's National Bureau of Statistics, 2014).

3.7 million high school graduates⁹. Moreover, most of the top universities are located in east coast and central part of China (see Figure 3 in the Appendix)¹⁰. Since students are only allowed to take entrance exams where their *hukou* are located, attending top universities becomes extremely difficult for a large portion of the population, especially for rural youths. Not only has their *hukou* constrained them, since rural area usually received lower enrollment quotas, but also the relatively low education quality in rural areas made them less competitive relative to urban youths (Liu, et al., 2009). The large entry barriers has limited China's social mobility between rural and urban areas because a higher education is the main mechanism for rural youths to earn an urban *hukou*. Therefore, perhaps education in China now has a positive effect on financial satisfaction, with limited access to high level of education, rural youths would less likely to be benefited from education. Consequently, regional inequality will only increase if entry barriers to education remain unchanged and this would like lead to a polarized society.

Making high school education free and compulsory can be a strategic step in equalizing access to higher education and may ultimately lead to higher levels of financial satisfaction. While the *hukou* system is not expected to be changed in the short run, mandatory and tuition free for high school education can only reduce entry barriers to high school education. In addition, the low aggregate capacity of high school and higher education institutions has to be addressed by increasing investment in infrastructure establishment in rural and western China. Regional schools need to be strengthened by providing policy support and promoting and diversifying economic development across the country. Furthermore, in order to eventually

⁹ See note 10 for university enrollment quotas.

¹⁰ 211 project and 985 project are the government's two new endeavors aimed to establish about 100 higher education institutions at international advanced level. Currently, 39 universities have been granted the title (China Education Center, 2004).

increase perceived financial satisfaction through education, skills and knowledge gained from education should match job market demand.

Although education development and college expansion have resulted in a huge increase in college enrollments rates, they also generate an excess supply of college graduates in the labor market¹¹. A surplus of college graduates in the labor market has led to a deterioration of working conditions, and the unemployment rate for recent college graduates has been constantly rising. According to the Chinese Academy of Social Sciences, the unemployment rate for college graduates increased from 9.1 in 2008 to 17.5 percent in 2011 (Ren & Zhao, 2012). In the long run, as China's economic transition moves to a more service-orientated and high-tech lead model that demands more human capital with a high education background, this situation will likely improve. Therefore, higher education expansion is strategically correct, especially in view of Chinese working age population begins to shrink. However, in the short run, high unemployment rate will continue to produce a negative effect on financial satisfaction among recent college graduates, and other strategies should be implemented to alleviate the growing unemployment problem.

The Chinese central government has already started a series of strategies to deal with the excess supply of college graduates in the labor market. College curriculums have been shifted toward the goal of providing more specialized training in response to market demands. Helping graduates locate jobs by creating new job skills and improving employment information has also been included in the higher education system. The government has also imposed policies that encourage college graduates to work in rural areas, or typically "Go West" (Yeung, 2012).

¹¹ China's college enrollment has increased from 1.0 million in 1999 to 6.9 million in 2012 (National Data, 2013)

Providing financial support for college graduates to start their own businesses and invest in enterprises are also widely used at the province level. Loosening the *hukou* system to allow greater mobility in the labor market will be the key to alleviating the regional labor surplus in the long run. By continuously implementing these strategies, more educational investment will not only improve quality and equity of education, but also will make education play a more vital role in affecting financial satisfaction as well as social well-beings.

Among all challenges the education expansion has confronted, the issue of inequality may be the most important. Without considering this issue, the education reform would only benefit one section of the populations. Inequality in education may be reduced by loosening the *hukou* system and providing more opportunities and resources to disadvantaged population. However, negative impacts of perceived income inequality and subjective social inequality on financial satisfaction will remain unchanged if the government takes no action against them. Not only does education have little impact on financial satisfaction in China, but it also has an insignificant effect on income distribution and socio-economic mobility. Therefore, future policy formation and prioritization should put more weight on strengthening education's role in promoting social and income equality. In this spirit, findings of this paper can serve as a prescription for the Chinese central government to improve its ongoing reform, manifest greater socio-economic mobility, and establish a harmonious society.

Appendix

Table 1: Key Variables and Definitions	
Dependent Variable	
Financial Satisfaction	Financial satisfaction measures how satisfy do survey respondents feel regarding their current income status. Survey responds scale from 1-10, where 1 is completely dissatisfied
Independent Variable	
Education	The highest education level of survey respondents. Survey responds scale from 1-4, where 1 is elementary education; 2 is middle school education; 3 is secondary education; and 4 is higher education
Other Controls	
Life Satisfaction	Life satisfaction measures how satisfy do survey respondents feel regarding their current life status? Scale from 1-10, where 1 is completely dissatisfied
Unequal	Perceived income inequality, where 1 is agree and 0 is disagree
Social Class	Perceived social class scales from 1-5, where 1 is upper class and 5 is lower class
Personal Characteristics	
Sex	Male dummy that sets 1 equals to “male”
Age	Respondents' age have been categorized into four groups: <30, 31-40, 41-50, 51-60, and 60+
Health	Self-rated health conditions. Scale from 1-5, where 1 is very poor and 5 is very good
Income Level	Income level scales from 1-4, where 1 is lower income level and 4 is higher income level
Children	The number of children in the family. Scale from 0-8, where 0 is no child and 8 is 8 children and above
Saving	Saving dummy that sets 1 equals to “saving”
Marriage	Marital status dummy that sets 1 equals to "married"
Employment	Employment status dummy that sets 1 equals to “employed”
Rural	Rural dummy that sets 1 equals to “rural residency”

Table 2: Key Variables Data Descriptive

Variable	N	Mean	SD	Min	Max
financialsf	4444	5.93	2.56	1.00	10.00
educ	4486	1.58	0.61	1.00	3.00
lifesf	4445	6.73	2.42	1.00	10.00
unequal	4055	0.47	0.50	0.00	1.00
socialclass	4185	3.52	0.94	1.00	5.00
male	4515	0.49	0.50	0.00	1.00
age	4515	2.65	1.28	1.00	5.00
health	4510	3.84	1.01	1.00	5.00
incomelvl	4053	2.64	1.03	1.00	5.00
children	4469	1.84	1.35	0.00	8.00
saving	4354	0.29	0.45	0.00	1.00
marriage	4495	0.85	0.36	0.00	1.00
employment	4425	0.78	0.41	0.00	1.00
rural	4515	0.54	0.50	0.00	1.00

Data: WVS China 1995-2007

Table 3: Correlation Between Key Variables

	financialsf	educ	lifesf	unequal	socialclass	male	age	health	incomelvl	children	saving	marriage	employment	rural
financialsf	1													
educ	0.07	1												
lifesf	0	0.64	1											
unequal	-0.1	-0.09	-0.09	1										
socialclass	0	0	0	-0.36	1									
male	-0.04	0.13	-0.03	-0.04	0.03	1								
age	-0.01	0	-0.09	-0.01	-0.03	0.06	1							
health	-0.02	-0.3	0	0.05	0.13	0.06	1							
incomelvl	-0.28	0	-0.79	0	0	0	0	1						
children	0.25	0.14	0.29	-0.03	-0.21	0.06	-0.27	0.2	1					
saving	0	0	0	-0.06	0	0	0	0	0	1				
marriage	0.32	0.19	0.26	-0.05	-0.45	-0.03	-0.14	0.2	0.25	0.35	-0.04	1		
employment	0	0	0	0	0	-0.05	0	0	-0.11	0	0	0	1	
rural	-0.03	-0.35	0.01	0.05	0.07	-0.02	0.61	-0.19	-0.19	1	0.07	0.11	0.25	1
	-0.03	0	-0.33	0	0	-0.3	0	0	0	0	0.07	0.16	0.25	0.25
	0.24	0.12	0.21	-0.02	-0.27	0.02	-0.09	0.15	0.25	-0.08	1	0	0.25	0.25
	0	0	0	-0.25	0	-0.15	0	0	0	0	0	0	0	0
	-0.03	-0.16	0.02	0.05	0.04	-0.03	0.22	-0.06	-0.02	0.35	-0.04	1	0	0
	-0.06	0	-0.11	0	-0.02	-0.03	0	0	-0.18	0	0	0	0	0
	-0.01	0	0.02	0	-0.06	0.12	-0.2	0.1	0.02	-0.09	0.07	0.11	1	0
	-0.54	-0.94	-0.11	-0.99	0	0	0	0	-0.14	0	0	0	0	0
	-0.08	-0.41	-0.06	0.03	0.04	-0.04	0.11	-0.08	-0.2	0.25	-0.11	0.16	0.25	1
	0	0	0	-0.07	-0.01	0	0	0	0	0	0	0	0	0

Data: WVS China 1995-2007

Table 3a: Perceived Financial Satisfaction (by region)

Region	1995	2001	2007
Urban	6.30836	5.66667	6.29799
Rural	5.94612	5.63063	5.63217
Total	6.11461	5.64653	5.9367

Data: WVS China 1995-2007

Perceived financial satisfaction is measured from 1-10 (highest)

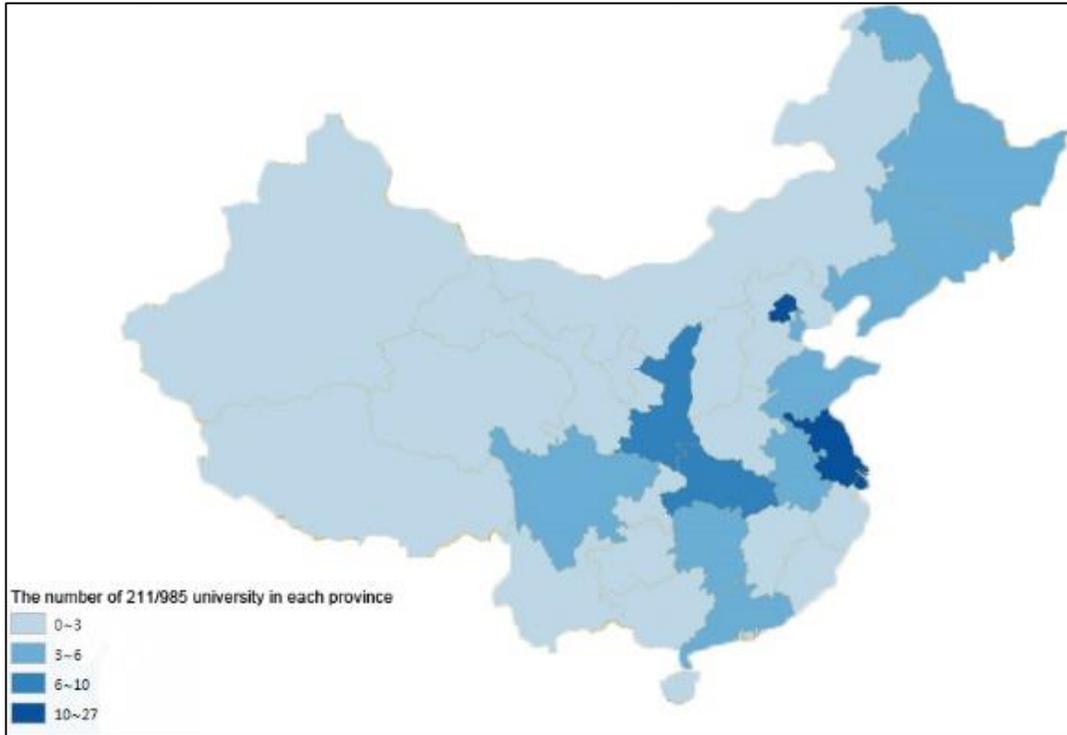
Table 3b: Perceived Financial Satisfaction (by income level)

Incomes	1995	2001	2007
Lower	3.83133	5.1	4.52332
Mid-lower	5.3674	4.75	5.81015
Mid	6.58594	5.52751	6.76015
Mid-higher	7.43145	6.02484	7.69697
Higher	8.25926	6.90909	6.66667
Total	6.11461	5.63397	5.96954

Data: WVS China 1995-2007

Perceived financial satisfaction is measured from 1-10 (highest)

Figure 3: Allocation of the Number of 211/985 Project University in China¹²



Source: Dituhui.com @ 2013

¹² Data source: *University List: "985" Project (39) "211" Project (112)*. Retrieved from Sina Education: <http://edu.sina.com.cn/gaokao/2011-03-31/1549290785.shtml>. Map is made using map editing tool provided by <http://www.dituhui.com/maps/13956>.

References

- Alesina, A., Di Tella, R., & MacCulloch, R. (2004). Inequality and happiness: are Europeans and Americans different? *Journal of Public Economics*, 88, pp. 2009–2042.
- Blanchflower, D. G., & Oswald, A. J. (2004). Happiness and the Human Development Index: The Paradox of Australia. *The Australian Economic Review*, 38(3), pp. 307–318.
- Brockmann, H., Delhey, J., Welzel, C., & Yuan, H. (2008). The China Puzzle: Falling Happiness in a Rising Economy. *Springer Science+Business Media B.V.*, 10, pp. 387-405.
- Bukenya, J. O., Gebremedhin, T. G., & Schaeffer, P. V. (2003). Analysis of rural quality of life and health: A Spatial Approach. *Economic Development Quarterly*, 17(3), pp. 280-293.
- Burbidge, J., Magee, L., & Robb, L. A. (2002). The Education Premium in Canada and the United States. *Canadian Public Policy*, pp. 203-218.
- Chamon, M., & Prasad, E. (2008). *Why are Saving Rates of Urban Households in China Rising*. IMF.
- Chen, X., Shi, Y., Mo, D., Chu, J., Loyalka, P., & Rozelle, S. (2013). Impact of a Senior High School Tuition Relief Program on Poor Junior High School Students in Rural China. *China & World Economy*, pp. 80-97.
- China Education Center. (2004). *Project 211 and 985*. Retrieved from China Education Center: <http://www.chinaeducer.com/en/cedu/ceduproject211.php>
- China's National Bureau of Statistics. (2014, 3 20). *Annual Statistics*. Retrieved from China's National Bureau of Statistics: <http://data.stats.gov.cn/workspace/index?m=hgnd>
- Clark, A. E. (2003). Unemployment as a social norm: Psychological evidence from panel data. *Journal of Labor*, 21(2), pp. 323–351.
- Clark, A. E., & Oswald, A. J. (1996). Satisfaction and Comparison Income. *Journal of Public Economics*, pp. 359-381.
- Dolan, P., Peasgood, T., & White, M. (2008). Do We Really Know What Make Us Happy? A Review of the Economic Literature on the Factors Associated with Subjective Well-being. *Journal of Economic Psychology*, pp. 94-122.
- Dorn, D., Fischer, J. A., Kirchgassner, G., & Sousa-Poza, A. (2007). Is It Culture or Democracy? The Impact of Democracy and Culture on Happiness. *Social Indicators Research*, pp. 82(3), 505–526.
- Easterlin, A. R. (1974). Does economic growth improve the human lot? Some empirical evidence. *Nations and households in economic growth*, 89.

- Easterlin, R. A. (2006). Life cycle happiness and its sources. Intersections of psychology, economics and. *Journal of Economic Psychology*, pp. 27, 463-482.
- Easterline, A. R. (1995). This study of falling financial satisfaction in China uses a number of different model specifications that build off one another and provide comprehensive interpretations of the relationship between education and financial satisfaction. *Journal of Economic Behaviour*, pp. 23, 35-47.
- Fahey, T., & Smyth, E. (2004). Do subjective indicators measure welfare? Evidence from 33 European societies. *European Societies*, pp. 6(1), 5–27.
- Ferrer-i-Carbonell, A. (2005). Income and well-being: An empirical analysis of the comparison income effect. *Journal of Public Economics*, pp. 89, 997–1019.
- Ferrer-i-Carbonell, A., & Gowdy, J. M. (2007). Environmental degradation and happiness. *Ecological Economics*, pp. 60(3), 509–516.
- Grable, E. J., & Lytton, R. H. (1998, 10 20). Investor Risk Tolerance: Testing The Efficacy Of Demographics As Differentiating And Classifying Factors. *Financial Services Review*, pp. 164-181.
- Graham, C., & Pettinato, S. (2001). Happiness, Markets, and Democracy: Latin America in Comparative Perspective. *Journal of Happiness Studies*, 2, pp. 237-268.
- Haller, M., & Hadler, M. (Social Indicators Research). How Social Relations and Structures can Produce Happiness and Unhappiness: An International Comparative Analysis. 2006, pp. 75, 169–216.
- Helliwell, J. F., & Putnam, R. D. (2004). The social context of well-being. *Philosophical Transactions of the Royal Society London*, pp. 359, 1435–1446.
- Johnson, W., & Krueger, R. F. (2006). How money buys happiness: Genetic and environmental processes linking finances and life satisfaction. *Journal of Personality and Social Psychology*, pp. 90, 680–691.
- Lam, K.-C., & Liu, P.-W. (2013). Socio-Economic Inequalities in Happiness in China and U.S. *Social Indicators Research*, pp. 1-25.
- Li, Q., Hu, J., & Hong, D. (2001). *Xiagan Issue Comparative Study*. Tsinghua University Press.
- Liu, C., Zhang, L., Luo, R., Rozelle, S., Sharbono, B., & Shi, Y. (2009). Development challenges, tuition barriers, and high school education in China. *Asia Pacific Journal of Education*.
- Liu, Q. (2011, 12 27). *Knowledge changes your fate and education changes your life*. Retrieved from China Education Daily: http://paper.jyb.cn/zgjyb/html/2011-12/27/content_57447.htm

- Lucas, R. E., Clark, A. E., Georgellis, Y., & Diener, E. (2004). Unemployment alters the set point for life satisfaction. *Psychological Science*, pp. 15(1), 8–13.
- Luttmer, E. F. (2005). Neighbors as Negatives: Relative Earnings and Well-Being. *The Quarterly Journal of Economics*, pp. 20(3), 963–1002.
- Macdonald, M., & Douthitt, R. A. (1992). Consumption Theories and Consumers' Assessments of Subjective Well-Being. *The Journal of Consumer Affairs*, pp. 26(2), 243–261.
- Marks, G. N., & Fleming, N. (1999). Influences and consequences of well-being among Australian young people: 1980–1995. *Social Indicators Research*, pp. 46, 301–323.
- Meier, S., & Stutzer, A. (2006). *Is Volunteering Rewarding in Itself?* Center for Behavioral Economics and Decision-Making, Federal Reserve Bank of Boston.
- Merton, R., & Kitt, A. (1950). Contributions to the theory of reference group behavior. In: Merton KK, Lazarsfeld PF (eds) Contributions in social research, studies in the scope and method of The American Soldier. *The Free Press*, pp. 40-105.
- Ministry of Education of the People's Republic of China. (10, 20 2006). *Vocational Education in China*. Retrieved from China.Org:
<http://www.china.org.cn/english/LivinginChina/185280.htm>
- National People's Congress. (1986). *Compulsory Education Law of the People's Republic of China*.
- Ren, B., & Zhao, Z. (2012, 5 2). *Report states that college graduates unemployment rate were 17.5% in the previous year*. Retrieved from Sina Finance:
<http://finance.sina.com.cn/china/hgjj/20120502/132311967037.shtml>
- Roszkowski, J. M. (1999). Risk tolerance in financial decisions. *Fundamentals of Financial Planning*, pp. 179-248.
- Shields, M. A., & Wheatley, P. (2005). Exploring the economic and social determinants of psychological wellbeing and perceived social support in England. *Journal Royal Statistical Society*, pp. 3, 513-537.
- Sina Education. (2011, 3 31). *University List: "985" Project (39) "211" Project (112)*. Retrieved from Sina Education: <http://edu.sina.com.cn/gaokao/2011-03-31/1549290785.shtml>
- The World Bank. (2012, 2 17). *China: Vocational Education Matches Youth with Jobs and Helps Sustain Growth*. Retrieved from The World Bank News:
<http://www.worldbank.org/en/news/feature/2012/02/17/china-vocational-education-provides-jobs-sustains-economic-growth>

- Vera-Toscano, E., Ateca-amestoy, V., & Serrano-del-rosal, R. (2006). Building Financial Satisfaction. *Social Indicators Research*, pp. 211-239.
- World Bank. (2013, 12 10). *Data-China*. Retrieved from The World Bank: http://data.worldbank.org/country/china#cp_wdi
- Xinhua News. (2005, 01 16). *Deng Xiaoping: to let partial people become rich first*. Retrieved from Xinhua: http://news.xinhuanet.com/newscenter/2005-01/16/content_2467918.htm
- Xinhua News. (2009, 1 7). *Opinion on the implementation of plans to introduce overseas high-level talents*. Retrieved from Xinhua News: http://news.xinhuanet.com/newscenter/2009-01/07/content_10620815.htm
- Yeung, W.-J. (2011, 3). Higher Education Expansion and Social Stratification in China. *Chinese Sociological Review*, pp. 52-80.
- Yu, Y. (2006, 7 31). The Urban Youth's Working in the Countryside and Mountain Areas and the Urbanization in China. *Academic Research*.