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Jacqueline Ho   April 8th, 2013

What Makes You Rich and Others Poor: How Many Spelling Contests You Win, How Many Wrinkles You Have, or What the President Has in Mind for Your Breakfast Table?

The Relationship between Income Inequality and Returns to Education in Urban China,

1988-2002

by

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Abstract

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The Relationship between Income Inequality and Returns to Education in Urban China,

1988-2002

In this paper, I hope to explore the relationship between income inequality and returns to education in urban China during the period of 1988 to 2002.

From existing research, I understand that income inequality increased during the sample period, and difference in education experience is one of the major contributing factors for this observed increase. Using data from the China Household Income Project, I develop regression models to see the effect of different education levels of various age and gender groups on total personal income. With both horizontal and vertical comparisons of stratified groups within the same survey year and across survey years, I find that returns to education increase at a decreasing rate across age groups in all three survey years; the percentage increase in income for a college education and a high school education compared to low education increases for both genders across time; a special group whose education was interrupted by the Cultural Revolution demonstrates interesting pattern in terms of the change in total personal income as a result of differences in education level.

Given these findings, there should be more carefully designed policies to assist those who face inequality in opportunities for education. Furthermore, it is necessary to consider what rippling effects are there caused by the education gap of this special group mentioned above.

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1. Introduction

"How is income equality changing in China?" "How does education affect one's income and wealth?" "Does the change in returns to education contribute to income inequality in urban China?" These have always been the questions I'm interested to discuss and further explore.

While there is a fruitful amount of research done to describe what changes China has experienced in the last two decades in terms of economic growth and income distribution, not so much is known about how changes in education return across time as China experiences its economic reform and transition act as a major factor in the increasing income inequality. In this paper, by studying how income inequality and returns to education change for specific age and gender groups during the period of 1988 to 2002 in urban China, I hope to be able to find the relationship between income inequality and the education received by an individual. An analysis as such will open doors for future research in the aspect of understanding the value of education as time goes by and its relation to changes in the bigger economic environment for countries that experience unique events and transitions as China has been, as well as for the exploration of the possibilities of better public policies that could potentially promote equality and improve the well-being of urban citizens in China.

The structure of this paper is as follows: Section 2 gives the background of the changes in China's big picture, more specifically, information on economic growth, income inequality, and education. Section 3 presents the data used in this project and the methodology developed to understand the relationship between personal income and education level. Section 4 discusses the results established by other relevant research as well as the results I found in the process of data

analysis, and digs deeper into the possible explanations for these observations. Section 5 concludes the paper and gives future research directions.

2. Background

(1)   China's economic transition and growth

In a planned economy, the government decides what a company should produce and how much it can produce. A major characteristic of a central-planned economy is that workers in the urban area work in assigned jobs and positions, and the employment is guaranteed for lifetime. The wage system was determined centrally by the government, which is mainly based on seniority and education background. Although the market economy reform started in the late 1970s, only the marketization of the goods market saw some progress. The labor market was still as inefficient as before. The urban labor market did not experience any substantial change until the 1990s(Korzec,1994 and Meng,2000).

Not until many stated-owned enterprises collapsed finally did the real changes occur in the urban labor market. In the late 1990s,around 12 million urban workers in the public sector were laid off(Meng,1998).Although the majority of the labor force still worked in the collective sectors, private employment grew substantially in the 1990s. Especially with the implementation of the export-oriented growth strategy, FDI and joint ventures brought employment opportunities to the cities(Meng, Shen and Xue,2013). Following this increase in the urban job opportunities, a major migration of the rural labor to the urban area took place in the late 1990s. However,it is argued that this significant increase in the supply of migrant workers did not have a dramatic effect on the urban workers' income inequality because of the institutional protection the urban workers had against the competition from the migrant workers in the labor market—the urban

workers were paid a wage premium for being an urban resident(Lee and Meng,2010 and Zhang, 2010).

The rapid growth of the non-state sector drove up the competition in the labor market by a significant amount. The collapse of small and medium sized state enterprises, accompanied by this fast growth in the private sector, led to the pressure on those state owned companies that survived the transition. Although people who worked for the state enterprises were still under fixed contract agreement, their wage became increasingly dependent upon the forces in the market (Meng, Shen and Xue,2013).

Due to these major institutional and structural changes in the urban area, China's national real GDP per capita is estimated to grow by 7.4% per annum during the period of 1988 to 2002(Appleton, Song and Xia, 2010).In 1988, China's GDP per capita is $281,and by 2002 its value has already increase to $1135(The World Bank Data, data in current US dollars). According to Dennis Young and Song Zheng's research in 2010, this economic growth manifests itself in individual life-cycle earnings profiles. There are two interesting observations they made from the analysis of the cross-sectional data of the period from 1992 to 2007. First, a big part of the earnings growth is realized us upward shifts in the level of life-cycle earnings profiles for successive young worker cohorts. Furthermore, contrast to previous literature, from the standard Mincer's regression, they found that earnings profiles have actually flattened out cohort by cohort in China's fast-growing economic environment(Firgure . Classifying the data by education level, they also found that the flattening of the life-cycle earnings profile for the college graduates was more dramatic, with two times the magnitude of that of the high school graduates. Meanwhile over the same period, rate of return to experience decreased by half.

(2)   Changes in Education

China experiences a barren period in education for the young generation during the Cultural Revolution period when schools were completely closed down and whoever tried to study on their own were punished. This has led to serious economic and social consequences.

In the hope of recovering from the stagnation, China goes into a major economic transition phase with all kinds of institutional changes, and education was one of them.When universities opened again after 1977, the cohort of youth who missed schooling during the Cultural Revolution was allowed to take the National College Entrance Examination and if performed well, they could go to college regardless of their age (Deng and Treiman, 1997).

With these efforts, the proportion of the labor force with a college degree increase drastically in the 1980s and early 1990s (attendance rates of college and high school are calculated for the three survey years 1988,1995 and 2002 in Table B). In a recent research, males with a tertiary degree are used as an example to illustrate the effect of the change in the education opportunity: in 1988, out of the 97% of the male urban labor force who worked in the state owned or collective sectors, only 15% of them had at least a college degree. After getting back on board with normal recruitment of students, the government noticed the slowing down of this increase in the educated proportion in the work force as well as a decrease in aggregate demand. Thus, in the hope of increasing college enrollment to pick up aggregate demand and prepare for future growth which will require more skilled labor, the expansion policy of higher education enrollment was put on the agenda and implemented in 1999. By 2009, this proportion of male with a college and above degree rose to 40%. It is expected that institutional changes with a big enough magnitude would have a significant impact on the earnings of the individuals (Meng,Shen,and Xue, 2013).

(3)   Urban income inequality in China

The term 'urban' has a special interpretation attached to it because of the Chinese household registration system. Before the People's Republic of China was formally established, China started to implement this household registration system: on the one hand, those who were born in the city are considered 'urban residents' and are given 'urban hukou'(urban household registration); on the other hand, individuals born in the countryside are assigned 'rural hukou'(rural household registration).The system is still in use. Thus, in this paper, when the term 'urban' is used, it is referring to the individuals with an 'urban hukou'.

It is most evident that inequalities exist between rural and urban residents as a result of the institutional factors, such as the Hukou system (Chinese household registration system), and the availability of educational opportunities. However, such income inequality is also observed within urban residents alone (Gao 2006), in other words, controlling the effect of the Hukou system on the chances in life of the residents in China, the inequality in income still exists.

As stated earlier, the economic reform of the urban area was not in place until the 1990s and significant transitions took place in both public and private sectors: many state-owned companies went bankrupt; higher skilled workers switched to the private sector; state-owned companies that were still in business went through significant changes with its wage system. As a result, the earnings inequality rose significantly as discussed by most existing literature in this area of study. Table A, taken from the paper *Economic Restructuring and Income Inequality in Urban China*, suggests that the income gap between increase during the sample period regardless of what measure it takes. For example, the Gini coefficient of the real per capita household income was

0.215 in 1988, but this number increased to 0.313 in 1999. Even for the period after the 1999, the

income inequality continued to rise.

3. Data and Methodology

(1)   Data

In order to explore the questions in this project from an empirical perspective, I chose to analyze the urban individuals' data from the China Household Income Project collected in 1988, 1995, and 2002 in the form of surveys by the Economics Institute, CASS.

The reason the Income Projects are able to provide appropriate information is that they are comprehensive enough to include common variables in different survey years, which are relevant for answering the questions that this paper hopes to explore, making an across-time comparison possible. Meanwhile, it is claimed that the Income Projects particularly in 1988 and 1995 "provide a better empirical foundation for the analysis of the nature, extent, evolution and sources of inequality in China as a whole than any other publicly available data"(Khan & Riskin,1998).

The sample size of each survey year generally decreases over time, being 31827, 21698, and 29632 respectively. For the purpose of analysis for the research topic in this paper, the samples are processed so that the observations without any information in total annual income of the survey year are dropped. Furthermore, I also drop the observations with an age below 18 or above 60 to focus on the people within the income-generating range of age. In order to make the total income comparable in different survey year, I use CPI to calculate how much a dollar in 1998 and 1995 is worth in 2002, and adjust the total income in 1998 and 1995 according the the ratio calculated. This means that the values under the variable "totalincome" used in the regressions to represent the total personal income are adjusted to the money value in 2002.

Meanwhile, a set of dummy variables are created—LowEdu, highschool, and college—to identify the education levels of the population, so that it is more convenient to observe the effect of education on income of different age and gender groups.

(2)   Methodology

To understand the effects of education on income between different age and gender groups of the same survey year and across time and to explore whether obvious trends can be found, the analysis is broken down into four parts: (1)how education contributes to income for different age groups within the same survey year;(2)how education contributes to income across survey years for people with the same year of birth;(3)how education contributes to income for the two genders within and across survey years;(4)how average income differs and changes within and across survey years for the above-mentioned groups.

a.   Age groups within the same year

The observations of each survey year are sorted into four age groups: 18(or 22)~30, 31~40, 41~50, and 51~60.The reason the lower boundary of the first age group differs for the survey years is that there is a drastic increase in the number of people who attend college in survey year 2002, which leads to the observation that less people between the ages of 18 and 22 choose to work. Thus, by changing the lower boundary of the first age group, I acknowledge the change in the range of age of those who have an income, and focus the analysis on this part of the population.

To explore the relationship between total personal income and educational levels, I use the Ordinary Least Squares (OLS) model to interpret the effect of education on income for the four age groups within the same survey year. The model is as follow:

$$TotalIncome = cons + \beta_h highschool + \beta_c college \,.$$

In the above model, $highschool$ and $college$ are two dummy variables that represent the highest education received by the samples. People with lower educational level are grouped together as the reference category. $\beta_h highschool$ and $\beta_c college$ will give us the difference in income between people who completed high school and college and those with lower educational level. $cons$ is the constant term that measures the average total income of the reference category.

b. Age groups across time

In this step of the analysis, the observations are grouped into smaller age cohorts sorted by their year of birth: 1942~1946, 1947~1950, 1951~1954, 1955~1958, 1959~1962, 1963~1966, 1967~1970, 1971~1974, and 1975~1977. To be able to trace effect of education on income across time of the people with the same year of birth, the samples with the same year of birth have to be in more than one survey year. These individuals are not the exact same group of people surveyed across time, but are considered to be comparable as long as they have the same year of birth. The following OLS model is used for the nine sorted groups to analyze the returns to education and by how much they affect the total personal income of each group:

$$TotalIncome = cons + \beta_h highschool + \beta_c college \,.$$

The interpretation of the variables and coefficients are exactly the same as part (a) of this section. The difference between part (a) and (b) lies in the scope of analysis: snapshot versus flow. By tracing each group down across the three survey years, I hope to identify whether there exists a trend of change in returns to education on income for different cohorts as they age, and if so, explore whether this change is different for each cohort. From there, it is possible to conclude whether the change in effect is an age effect or cohort effect.

c. Gender groups

In this part of the analysis, I focus on the difference in returns to education for the two genders, and observe whether the difference has changed across the three survey years. In order to explore the effect layer by layer, the following models are used:

(i) $TotalIncome = cons + \beta_h highschool + \beta_c college$

This OLS model is used to work with each gender group separately, meaning the condition for each of the regressions under this model is either Female==1 or Male==1.

In the case of Female==1, $highschool$ and $college$ are similar to previous model where they are two dummy variables that represent the highest education received by the females in the samples. Females with lower educational level are pooled together as the reference category. $\beta_h highschool$ and $\beta_c college$ show the difference in income between females who completed high school and college and those with lower educational level. $cons$ is the constant term that measures the average total income of the reference category with no work experience. The same analysis is done to the case of Male==1.In general, stratified by gender, the model allows the coefficients on education to vary by gender.

(ii) $TotalIncome = cons + \beta_h highschool + \beta_c college + \delta_m Male$

This OLS model includes both genders in the analysis. The purpose of this is to understand more clearly the difference between the two genders by introducing the dummy variable term $\delta_m Male$. This term will provide the average difference in income between male and female, holding education constant. In other words, δ_m shows how much more income a man with low education makes compared to a woman with low education.

With the new term in the model, the interpretation of the term $cons$ differs from that of part (ii). The reference category in this model is the female group with lower educational level. Thus, $cons$ here represents the average total income of this new reference category with no work experience.

(iii) $TotalIncome = cons + \beta_h highschool + \beta_c college + \delta_m Male + \delta_{mh} Male *$
$highschool + \delta_{mc} Male * college$

This OLS model is designed to further explore the different gender differences in the returns to education of each educational level. This is achieved by creating two interaction terms $\delta_{mh} Male * highschool$ and $\delta_{mc} Male * college$.If the model is rearranged as follow:

$TotalIncome = cons + \beta_h highschool + \beta_c college + (\delta_m + \delta_{mh} highschool + \delta_{mc} college)$
$* Male\ ,$

and

$TotalIncome = cons + (\beta_h + \delta_{mh} Male) * highschool + (\beta_c + \delta_{mc} Male) * college$
$+ \delta_m Male\ ,$

then it is clearer with the interpretation of the coefficients. δ_m gives the marginal effect of being a male on total income with low educational level, meaning highschool==0 and college==0. β_h and β_c may be interpreted as the marginal effect of having a high school degree and a college degree on total income for females, in other words Male==0. More specifically, β_h and β_c represent how much more income a woman with high school education or college education makes compared to a woman with low education. δ_{mh}, and δ_{mc} are the amount of extra total income associated with males who have received a high school education or a college education. Put differently, δ_{mh}, and δ_{mc} give the income difference between men and women with high school education and college education.

The results of the above regressions can be found at the end of this paper.

d. Changes in averages

In this part of the analysis, two metrics: (1) changes in the average total income of different age and gender groups stratified by levels of education, and (2) the ratios to visualize the percentage change in income resulted from the difference in education level, are calculated to understand the general trends in returns to education across time.

Figures and tables created in this part are listed at the end of this paper.

4. Results

(1)　What happened to income inequality?

As presented before, after China gradually transformed from a central-planned economy to a market economy after the government established the open-up policy in 1978, it has been experiencing constant changes in the social environment, as well as in the well-being of the individual participants in the economy. The predication of the traditional Heckscher-Ohlin model and its companion Stolper-Samuelson theorem suggests that integration into the world economy will increase the relative returns to unskilled labor in labor-abundant developing country; however, the empirical evidence shows otherwise. Although China has been increasingly integrated into the world economy, it experiences a rising income inequality (Han, Liu, and Zhang 2011).

As discussed in the research *Growing out of Poverty: Trends and Patterns of Urban Poverty in China 1988-2002*, "[i]ncome growth during 1988-2002 was regressive, with growth rates rising as we move up the income distribution(an exception is between the 80 and 90 percentile).Growth rates for the 90th percentile [in terms of average income] averaged 5.7% per annum, nearly twice the 2.9% growth rate experienced by the poorest decile". This gap in income growth rate is demonstrated in Graph A. As can be seen from the graph, during the period of 1988-1995, the poor experienced a very slow income growth (0.2%), while the rich enjoyed a growth rate of 6%. However, in the period of 1995-2002, the curve is relatively flat, meaning that both the rich and the poor experience similar growth rate (5%). After all, during the whole sample period,1988-2002, the income of the poor grew slower than the rich, which led to

the increase in income inequality, matching what is found in the trends of the general indices of income inequality as demonstrated in Table A.

After realizing the existence of such income inequality, it is logical to try to explore what are the main contributing factors to this inequality. In Meng's research *Economic Restructuring and Income Inequality in Urban China*, after using his modified model of regression to break income inequality down, he is able to point out these major contributing factors, and education is one of them. Keeping this mind, we can then go in depth to explore changes in the returns to education during the sample period and hence identify what matches our expectations and what doesn't.

(2)   Any general trends in education returns in the period of 1988 to 2002?

a. Some ratios

Table 1.1,1.2,and 1.3 present the regression results of the OLS model used to analyze the "snapshots" of the four age groups—18~30,31~40,41~50,and 51~60—in the three different survey years. By looking at these three regression tables both horizontally and vertically, we will be able to find the differences in returns to education for the same age group in the three different survey years as well as the differences in returns to education for the different age groups in the same survey year.

Table 2.1 to 2.5 give the regression results of the OLS model designed to explore the "flow" of the change across time for different birth cohorts—1942~1946, 1947~1950, 1951~1954, 1955~1958, 1959~1962, 1963~1966, 1967~1970, 1971~1974, and 1975~1977.For this set of

tables, we will just take a horizontal view and try to understand how returns to education change across the three survey years.

The tables give the change in income, in absolute terms, as affected by different educational levels. In order to understand the relative value of different education experience, the following ratios are calculated:

$$\frac{\beta_c}{cons} = \frac{returns\ to\ a\ college\ education}{retursn\ to\ low\ edcuation},$$

and

$$\frac{\beta_h}{cons} = \frac{returns\ to\ high\ a\ school\ education}{retursn\ to\ low\ edcuation},$$

here, $\frac{\beta_c}{cons}$ and $\frac{\beta_h}{cons}$ represent the percentage increase in the total income for an individual with a college education or a high school education compared to an individual with low education;

$$\frac{\beta_c}{\beta_h} = \frac{returns\ to\ college\ education - returns\ to\ low\ education}{returns\ to\ high\ school\ education - retursn\ to\ low\ edcuation},$$

$\frac{\beta_c}{\beta_h}$ calculated this way will give us the relative returns to a college education compared to the returns to a high school education;

$$\frac{\beta_c\ of\ 2002}{\beta_c\ of\ 1995}, \frac{\beta_c\ of\ 1995}{\beta_c\ of\ 1988}, \frac{\beta_h\ of\ 2002}{\beta_h\ of\ 1995}, \frac{\beta_h\ of\ 1995}{\beta_h\ of\ 1988},$$

the above four ratios are designed to see how the returns to a college education and a high school education for each age group change over the three survey years—from 1988 to 1995,and from 1995 to 2002;

$$College\ Premium = \frac{average\ income\ of\ individuals\ with\ a\ college\ education}{average\ income\ of\ individuals\ with\ a\ high\ school\ education},$$

college premium is used to understand the income gap between a college degree and a high school degree.

With these ratios available, we are now able to start exploring how returns to education change over the period of 1988 to 2002 for the four age groups.

b. General trends for age groups

First, taking a horizontal view of Table 1.1-1.3, we can see that the returns to education for both a high school education and a college education generally increase in the absolute term across age groups in the same year for the three different survey years. In other words, the contribution of education to income in the absolute term is positively correlated with age.

If we take a look at Table 1.1.1-1.3.1, in 1988,the percentage increase income of a high school degree and a college degree compared to that of low education is relatively constant throughout age groups. Plotting the average income of a high school graduate, a college graduate, and an individual with low education(Figure 1.1,1.1.1),it can be observed that the three curves are almost parallel to each other, which makes the increase in income across age groups relatively steady for all three education levels. In other words, the increase in the returns to education of each education level for across age groups in 1988 is an age effect.

In 1995, however, the curves are no longer parallel to each other throughout age groups. The first two groups (18-30, 31-40) still experience a similar pattern where the returns to education for each education level move in the same direction at similar speed. When the curves reach the group of age 41-50, they start to diverge and this effect becomes more apparent with the age

group 51-60. This means that for the latter two groups, what education one receives makes a significant difference in one's income.

In 2002, the gap between the average income of a college graduate and that of a high school graduate starts to diverge from the very first group, while the difference between the two education level and the low educated group actually decreases throughout age groups. When the curves reach the last two groups (41-50,51-60),instead of diverging as what happens to the 1995 graph, the three curves converge, which makes the income gap between the three education level smaller.

The difference can be explained by the transition from a planned economy to a market economy. As previously mentioned, under the central-planned economy, the wage system is heavily dependent upon seniority and education, whereas in a market economy, people are rewarded based more on whether the individual is giving the society what it wants than what kind of personal characteristics one has. Since many state enterprises experienced serious losses in the 1990s, less capable people were laid off and the more capable switched to the private sector. This change took place throughout the 1990s, which is demonstrated clearly by the divergence income between different people with different education levels in the 1995 figure. This find matches with existing literature, which suggests that when an economy shifts from a administratively determined wage system to a market driven wage system, reward to both observed skills and unobserved skills increase. However, after the implementation of the college expansion program in 1999, the amount of skilled labor skyrocketed. The acceptance rate to college in 1988, 1995 and 2002 were 24.63%, 36.76% and 62.75% respectively. As suggested by the basic principles of supply and demand, as quantity of supply of skilled labor goes up, faster than the rate of growth of the economy and demand in skilled labor, the price in this labor market

drops. Although it is true that within the transition period, there is a huge inflow of migrant workers from the rural area going into the urban area, because of the household registration system that differentiates urban residents and rural residents and protects urban residents from competition in the job market, the income inequality in urban China is seen not affected by this incoming rural labor force.

c. Gender groups

Table 3.1-3.3 give us the regression results for models used to understand the difference in returns to education stratified by gender.

Looking only at the first two regressions for the three survey years, it can be seen that the percentage increase in income for a college education and a high school education compared to low education increases for both genders across time. This kind of increase is more apparent in the female group. This kind of increase is more apparent in the female group. The reason for this difference in the rate of increase is due to three reasons. First, the proportion of female workers with college education over time increased faster than that of male. This leads to the interesting observation that even though the gap between the labor force participation of men and women widened across time, the increase in total personal income as a result of higher education for women is higher than that for men. Second, the type of jobs available to women increases as China goes through its structural changes. Women move from working in the public factories as manual workers to jobs as the secretary and assistant in the private sectors. With an increase in the proportion of women with higher degrees participating in the labor market, women face increasing job varieties. Men experience similar changes. However, due to the difference in the initial condition in the availability of job opportunities, the effect of economic transition on

women was more obvious. However, the speed of this increase in the relative return to education drops during the 1995 to 2002 period. Third, a higher education serves as a signaling effect. Women in the beginning of the economic transition are more like young adults who just graduate from college with no previous records of professional achievements. One's education level then helps the employer better understand the abilities of the woman so that the employer can see whether the woman is a good fit for the position or not. Furthermore, a higher education helps remove the gap between man and woman in terms of discrimination and gender preferences, which is particular for women.

Moving on to the third regression, it gives the difference in income between the women and men with low education. Throughout the years, this gap is widened. This is due to the limited amount of work women can do and limited amount of jobs available for non-skilled women. For this group of women, the main jobs available are hard labor in the factories. Compared to the female group with low education, the male group with this education level can complete more hard labor more efficiently. With all kinds of development in different cities, more jobs demanding low-skilled workers become available. However, when it comes to hiring, women are still at disadvantage because of the physical limitation and the companies' concerns over the maternal leave of their female employees.

Considering the last regression, the coefficients of $Male * highschool$ and $Male * college$ represent the difference in income between educated men and educated women. The insignificant coefficients of the $Male * college$ variable suggests that we cannot reject the null hypothesis $H_0: the\ coefficient\ is\ 0$, which means that we cannot say that the income difference between women and men with college education exists. At least, not from the data I have at hand. Though we cannot conclude anything about the college aspect, we can still observe a difference

for men and women with high school education in 1988 and 1995.It is interesting how women with high school education makes more than men with a similar education background. The difference still lies in the types of jobs available for men and women with a high school education. For women with a high school degree, the jobs available waitressing, logistics, nursing, etc. While men in the same shoes cannot differentiate themselves too much from individuals with a low education level. This is most evident in the coefficient (-377.08) of highschool in regression for the male gender group in 1988.However,even though their relative income compared to the low education individuals rise in 1995,the income gap between men and women with a high school education widened. This was due to the fact that more private firms were established in the 1990s, offering more sales, logistics and other service jobs for women. It was also starting from that period did the demand for nannies and house maids increased, which further increases the gaps between men and women with this education background.

(3)   Who are so special and why so special?

In Table 1.1, it can be identified easily that in 1988, the returns to education for individuals in the age group of 31~40 is surprisingly low compared to the adjacent groups. As this group ages, they become part of the two group—31~40 and 41~50—in 1995.The low reward to education is still present to this particular group of people, causing the average returns to education to be lower than expected for the above two age groups in 1995. Although the effect becomes more subtle, it is still present in the year of 2002. Looking at the more detailed tables stratified by the year of birth, we can see that this group of people are the individuals who were born in between 1948 and 1957. Relating to the regression results, these people fall into the birth cohorts of 1947~1950,1951~1954,and 1955~1958,which can be found in Table 2.1 and 2.2.

These individuals are the ones who suffered the social changes of the Cultural Revolution and whose education was interrupted during the period. This is why throughout three survey years, this group of people demonstrated unique characteristics.

In Table 1.1.1, the ratios $\frac{\beta_c}{cons}$ and $\frac{\beta_h}{cons}$ if this group are exceptionally low compared to other groups of people. This is because in the dummy variable highschool, I included individuals who graduated from junior high school as well. Similarly, in the dummy variable college, I included junior college and technical college. Although these schools are considered to be secondary and tertiary, there are differences in terms of the type of jobs people can get compared to a normal high school graduate and a college graduate. Even though these people who were taken away the chance to study during the Cultural Revolution were allowed to sit back in the National College Entrance Exam, the education the majority of them ended up getting was still lower than that under the condition where their education was not interrupted. Meanwhile, even though the schools were back on track, the quality of education in the beginning of the revival period was still affected by the withdraw period. Everyone, both the teachers and the students, needed some time to adjust. This led to the deficiency in the quality of education gotten by the people enrolled in school right after the Cultural Revolution.

Within this group itself, there exists great income difference. Looking at Figure 2.1.2, 2.2.1, and 2.2.2, we will be able to see that for all three birth cohorts, the income difference between the three education levels diverge greatly after 1995. This is consistent with the general trend mentioned the earlier part of this section. However, if we compare the curves of these three birth cohorts with other ones, we can see that the income gap of other cohorts increases at a much slower rate. This is also due to the fact that the difference between education levels for this group

is not marginal. People in this group with a high school or junior high school degree must have gotten it before the Cultural Revolution. People in that birth cohort who have a college degree are either very smart who self-studied, or who were already in high school when Culture Revolution started. In either case, they can easily differentiate themselves from the people with only a high school degree, since under the normal condition, people with high school degrees are able to gain more work experience than the college graduates who give up the work experience as an opportunity cost of their college education. However, for this unique group of people, no one had the work experience, and everyone ages at the same time. One of the major characteristics of the low end jobs done by people with lower education levels is that these types of jobs require physical strength and good condition, which younger generations are in better position to claim. Thus, the people in this cohort who did not have a college degree were at disadvantage in terms of job opportunities, while the people with a college degree took advantage of the transition phase and the drastic increase in the opportunities available, both academic and career wise, and further their difference from their peers.

5. Conclusion

The effect of education on income inequality in urban China during the period of 1988 to 2002 is mainly affected by the economic transition and the education expansion program. Moreover, the historical lingering effect of Cultural Revolution has led the group of people whose education was interrupted by this historical event to demonstrate unique patterns in terms of the relationship between income and education.

With the structural changes in the economy, education premium increases over the years, but the gap between different groups widens. In the job market, the type of jobs available expands, especially for women, leading to the observation of an increase in education premium for women, but it increases at a decreasing rate as a result of the job market becoming increasingly saturated. Meanwhile, as a joint effect of the economic transition and the college expansion program, there is in increase in the demand for skilled labor, as well as competition. With more people joining the labor force with a college degree, the expansion of college recruitment pool caused the returns to college education to drop after late 1990s, but led to the rise of the general level of the quality of labor.

The special group of people who suffer the consequences of the Cultural Revolution can be considered as a reason for the observed income inequality during the sample period. This adds to existing literature on the topic of the decomposition of income inequality during this transitional period in China.

For future work extension, the difference in income inequality caused by unobserved skills as a result of higher education can be further explored on top of the findings in this paper. By

breaking down the result of education into observed skills and unobserved skills, the aspects of education that contribute to the changes in personal income can be more specifically identified so as to help point in the direction of better public policy that increases the effectiveness of the education received by the population. Furthermore, how quality of education affects total personal income is an interesting dimension to look at. Even though it is very hard to measure the quality of education in China for each individual, it is possible to rank all universities based on certain qualifications and assign number value or scores to each university based on its ranking. This is only a possible approach, which is still quite general and assumes that the quality of education within every school is the same across departments. To break it down further, the types of degree received should also be considered. These are all possible directions to take off from this paper, and it would be my honor if this paper can provide ideas for any further research in this topic.

Tables, Figures, and Graphs

Note: For all the regression tables in this section, * *p*<0.05, ** *p*<0.01.

Table A:

VARIOUS INEQUALITY MEASURES OF INCOME, 1988, 1995, AND 1999

|	Real Per Capita HH Income			Real HH Income		
	1988	1995	1999	1988	1995	1999
Relative mean Dv.	0.149	0.194	0.222	0.148	0.184	0.221
Coeff. Var.	0.447	0.558	0.636	0.442	0.514	0.663
SD of logs	0.392	0.506	0.601	0.404	0.484	0.605
Gini coefficient	0.215	0.273	0.313	0.215	0.260	0.313
Mehran measure	0.300	0.380	0.429	0.302	0.364	0.428
Piesch measure	0.173	0.220	0.255	0.172	0.209	0.255
Kakwani measure	0.044	0.068	0.088	0.044	0.062	0.088
Theil entropy measure	0.082	0.126	0.166	0.082	0.114	0.170
Theil mean log Dv.	0.079	0.126	0.171	0.081	0.115	0.173

Note: Table A is taken from *Economic Restructuring and Income Inequality in Urban China*

Table B:

High School and College Attendance of Wage Earning Individuals between Age 18 to 60

|	1988	1995	2002
High school	74.44	70.14 (↓5.78%)	67.14 (↓4.28%)
College	13.01	21.76 (↑67.26%)	28.16 (↑29.41%)

Figure A:Annual growth rages at decile points
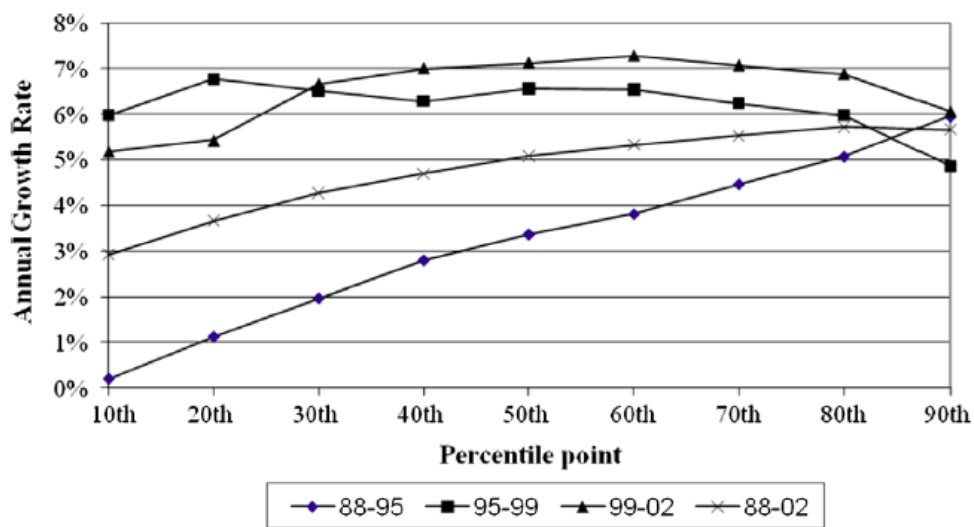
Notes: Figure A is taken from *Growing out of Poverty: Trends and Patterns of Urban Poverty in China 1988-2002*

Figure B:Life-Cycle Earnings Profiles by Cohorts
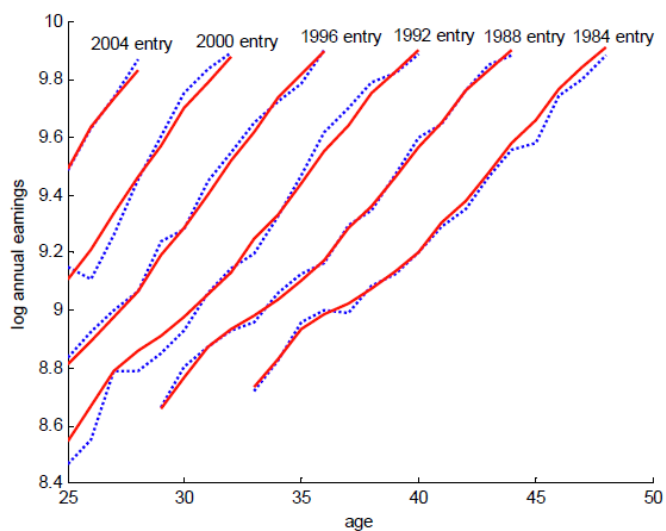
The dotted lines are log annual earnings by cohorts. The solid lines are predicted earnings according to the regression results in column (1) of Table 2.

Figure C: Cross-Sectional Life-Cycle Earnings Profiles
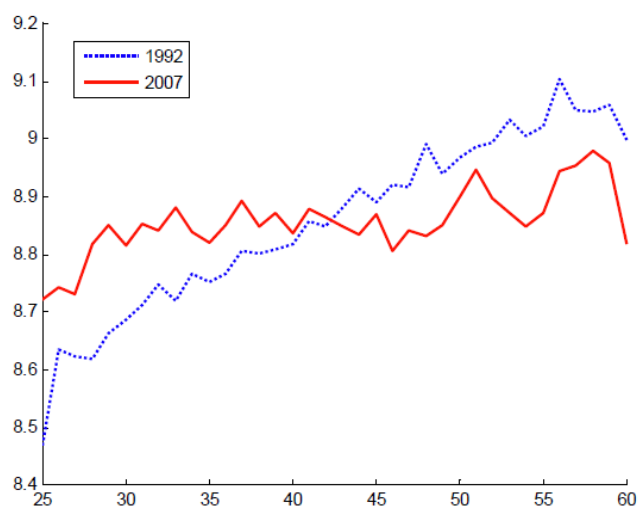
The dotted and solid lines refer to the cross-sectional age earning profiles in 1992 and 2007, respectively. The scale of the profile for 2007 is adjusted such that the mean of age earnings is equalized across 1992 and 2007.

Note: Figure B and Figure C are taken from *Life Cycle Earnings and the Household Saving Puzzle in a Fast-Growing Economy*

1. Age groups in the same survey year

Table 1.1:

Totalincome1988	18~30	31~40	41~50	51~60
highschool	296.247	143.864	428.432	567.907
	(3.60)**	(2.87)**	(7.94)**	(6.86)**
college	697.543	455.843	1,110.873	1,196.324
	(7.50)**	(7.00)**	(15.50)**	(11.65)**
_cons	2,013.858	2,958.649	3,249.779	3,679.109
	(24.90)**	(62.85)**	(69.04)**	(53.46)**
N	4,775	6,223	4,423	1,956

Table 1.2:

Totalincome1995	18~30	31~40	41~50	51~60
highschool	1,575.119	1,714.597	1,671.762	2,756.824
	(1.66)	(3.96)**	(6.86)**	(11.46)**
college	3,005.575	3,181.402	3,829.539	6,150.372
	(3.13)**	(7.07)**	(13.45)**	(21.08)**
_cons	3,195.206	5,062.380	5,929.681	4,723.925
	(3.39)**	(11.91)**	(26.02)**	(23.01)**
N	2,803	4,265	4,223	2,494

Table 1.3:

Totalincome2002	22~30	31~40	41~50	51~60
highschool	4,061.338	3,517.960	3,279.095	3,114.244
	(1.71)	(2.88)**	(5.65)**	(6.81)**
college	7,661.427	8,713.517	10,282.786	10,237.142
	(3.23)**	(7.10)**	(16.51)**	(19.04)**
_cons	3,714.269	5,703.151	6,825.375	7,398.243
	(1.58)	(4.73)**	(12.11)**	(17.50)**
N	1,511	3,804	4,574	2,769

Ratios for analysis

Table 1.1.1:

1988	18~30	31~40	41~50	51~60
$\dfrac{\beta_h}{cons}$	14.71%	4.86%	13.18%	15.44%
$\dfrac{\beta_c}{cons}$	34.64%	15.41%	34.18%	32.52%
$\dfrac{\beta_c}{\beta_h}$	2.35	3.17	2.59	2.11
College premium	1.17	1.10	1.18	1.15

Table 1.2.1:

1995	18~30	31~40	41~50	51~60
$\dfrac{\beta_h}{cons}$	49.30%	33.87%	28.19%	58.36%
$\dfrac{\beta_c}{cons}$	94.07%	62.84%	64.58%	130.20%
$\dfrac{\beta_c}{\beta_h}$	1.91	1.86	2.29	2.23
College premium	1.30	1.22	1.28	1.45

Table 1.3.1:

2002	22~30	31~40	41~50	51~60
$\dfrac{\beta_h}{cons}$	109.34%	61.68%	48.04%	42.09%
$\dfrac{\beta_c}{cons}$	206.27%	152.78%	150.66%	138.37%
$\dfrac{\beta_c}{\beta_h}$	1.89	2.48	3.14	3.29
College premium	1.46	1.56	1.69	1.68

Figure 1.1:
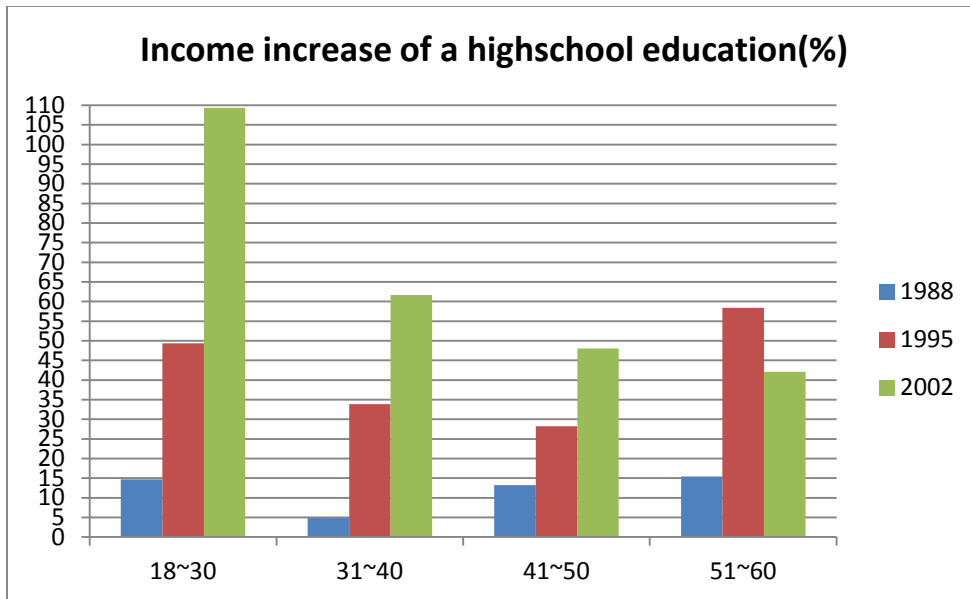
Figure 1.2:
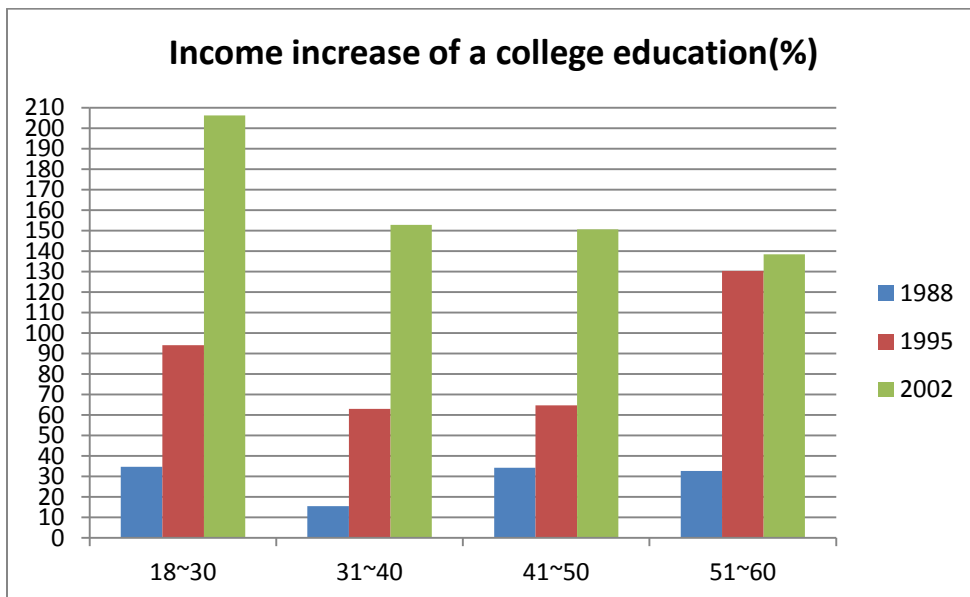
Table 1.4:

	18~30	31~40	41~50	51~60
$\dfrac{\beta_h \text{ of } 1995}{\beta_h \text{ of } 1988}$	5.32	11.92	3.90	4.85
$\dfrac{\beta_c \text{ of } 1995}{\beta_c \text{ of } 1988}$	4.31	6.98	3.45	5.14
$\dfrac{\beta_h \text{ of } 2002}{\beta_h \text{ of } 1995}$	2.58	2.05	1.96	1.13
$\dfrac{\beta_c \text{ of } 2002}{\beta_c \text{ of } 1995}$	2.55	2.74	2.69	1.66

Note: β_h: returns to a high education compared to the returns to low education, β_c: returns to a college education compared to the returns to low education

$$\frac{\beta_h}{cons} = \frac{returns\ to\ high\ a\ school\ education}{retursn\ to\ low\ edcuation}$$

$$\frac{\beta_c}{cons} = \frac{returns\ to\ a\ college\ education}{retursn\ to\ low\ edcuation}\ , \ \frac{\beta_c}{\beta_h} = \frac{returns\ to\ college\ education - returns\ to\ low\ education}{returns\ to\ high\ school\ education - retursn\ to\ low\ edcuation}$$
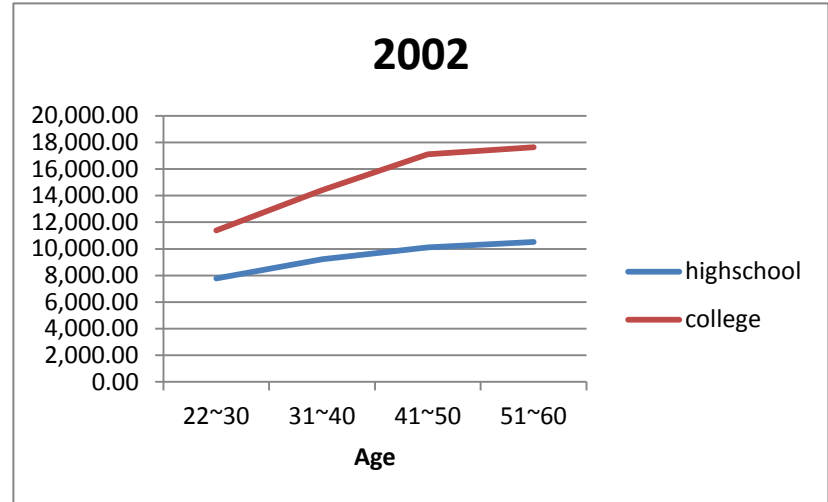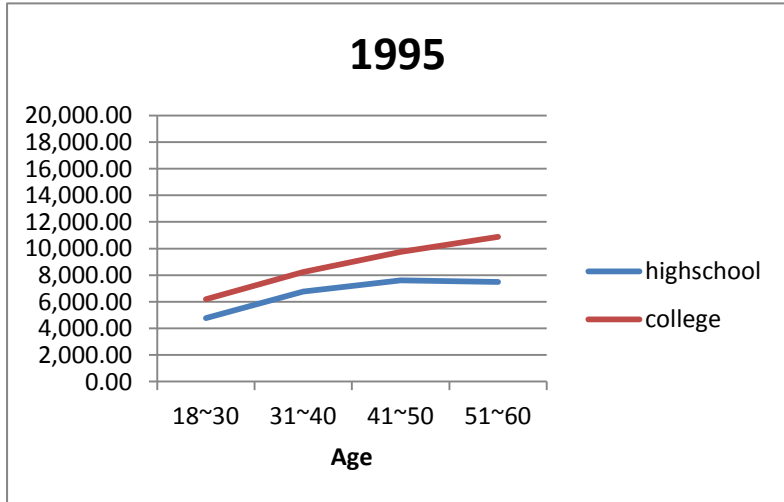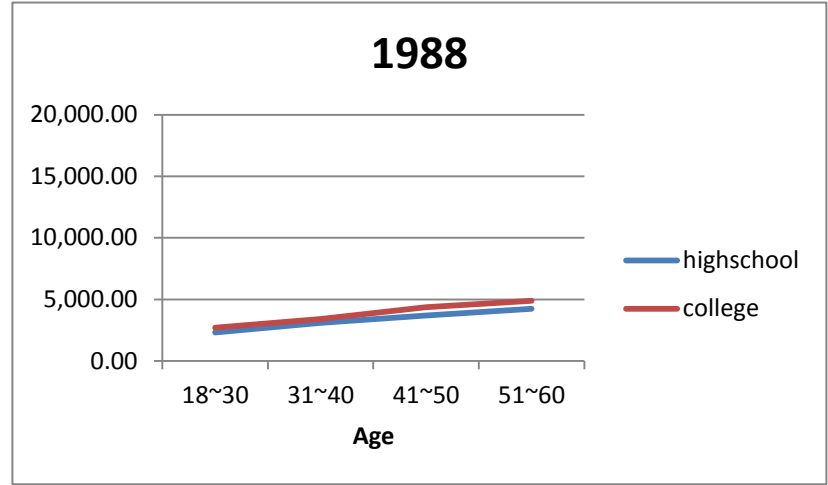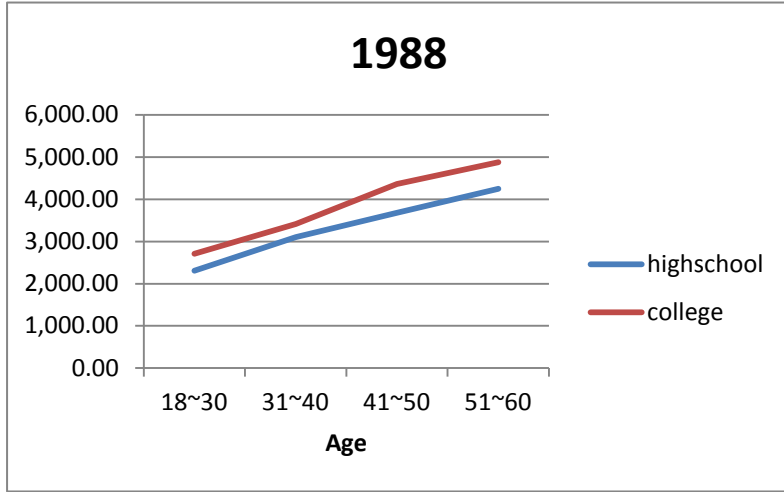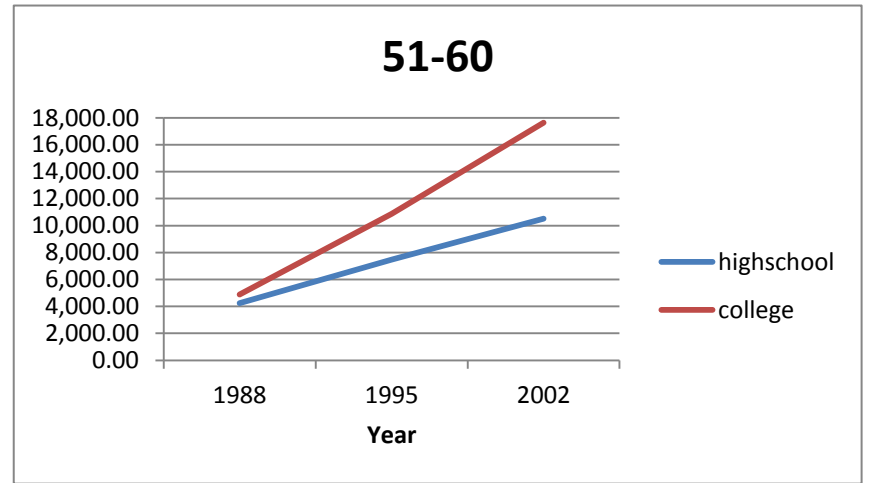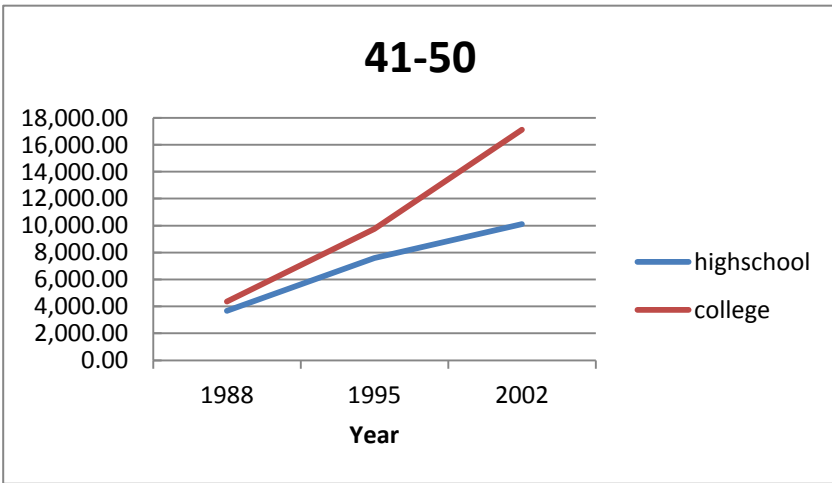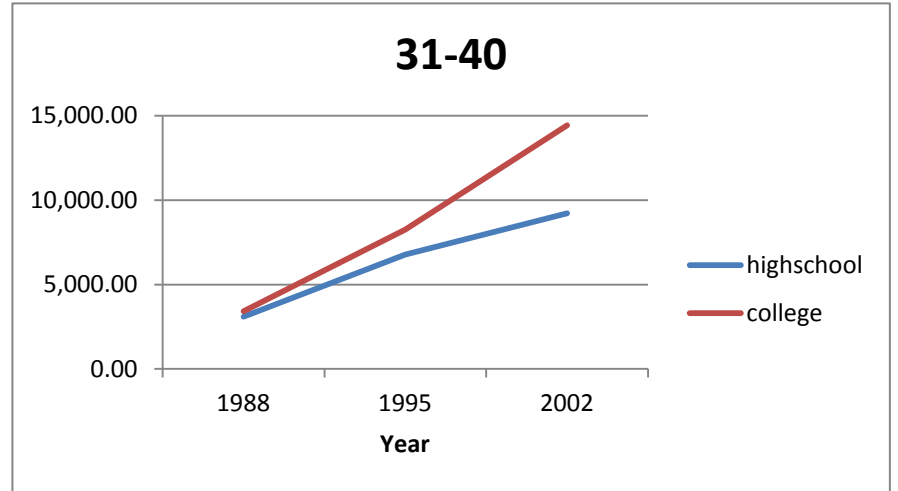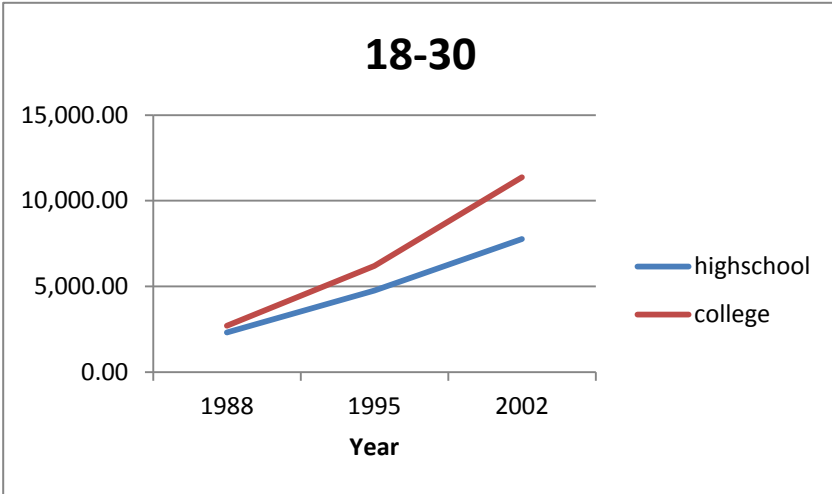
2. Age groups across time

Table 2.1:

TotalIncome	1942-1946			1947-1950		
	1988	1995	2002	1988	1995	2002
highschool	448.563	2,366.233	3,354.462	278.582	1,488.429	2,846.803
	(6.01)**	(6.17)**	(4.66)**	(3.32)**	(4.47)**	(4.21)**
college	1,115.819	5,327.086	10,488.214	534.713	3,386.769	10,148.634
	(11.06)**	(11.84)**	(12.22)**	(4.63)**	(8.59)**	(13.01)**
_cons	3,169.063	5,258.306	7,145.902	3,091.474	6,144.440	7,607.237
	(48.13)**	(15.30)**	(11.01)**	(40.88)**	(19.94)**	(12.06)**
N	2,190	1,342	967	2,403	1,613	1,366

Table 2.2:

TotalIncome	1951-1954			1955-1958		
	1988	1995	2002	1988	1995	2002
highschool	186.822	1,566.829	3,152.750	205.120	1,741.292	3,726.360
	(3.03)**	(3.87)**	(4.72)**	(2.16)*	(2.82)**	(3.55)**
college	495.768	3,716.232	10,237.552	576.662	3,350.832	11,122.717
	(6.22)**	(8.01)**	(13.36)**	(5.21)**	(5.10)**	(9.97)**
_cons	2,886.764	5,970.881	7,236.597	2,669.591	5,533.489	6,395.666
	(49.69)**	(15.53)**	(11.40)**	(28.89)**	(9.20)**	(6.22)**
N	2,618	2,035	1,961	2,285	1,990	1,909

1951-1954

1955-1958
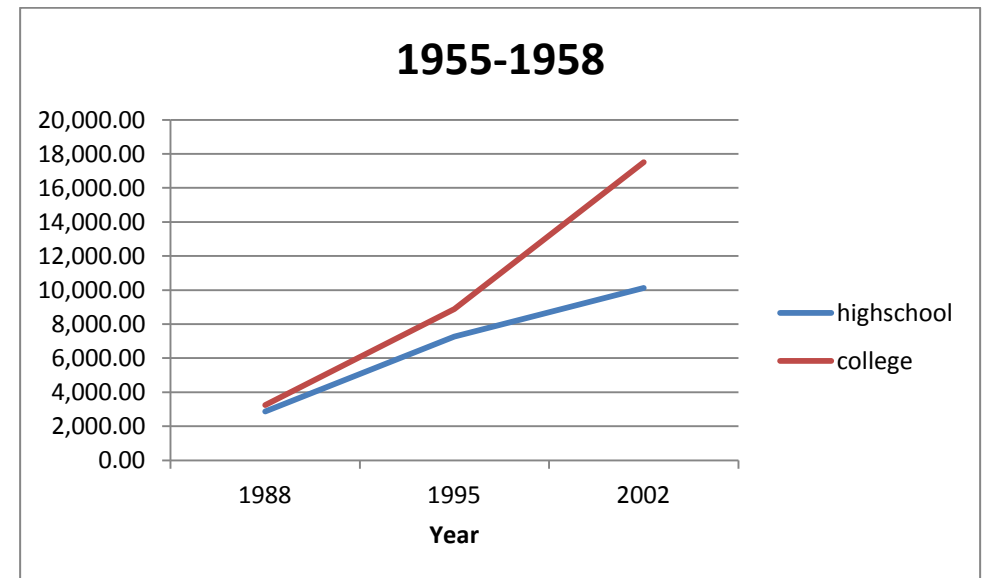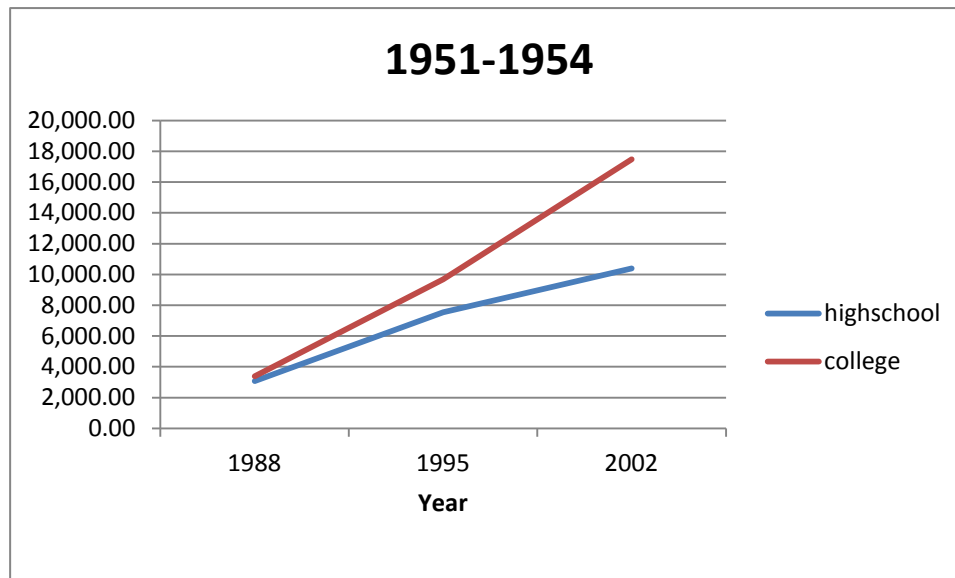
Table 2.3:

TotalIncome	1959-1962			1963-1966		
	1988	1995	2002	1988	1995	2002
highschool	227.404	2,228.106	2,227.690	218.967	2,016.859	4,164.681
	(1.63)	(3.08)**	(1.32)	(1.48)	(1.60)	(2.07)*
college	544.960	3,527.403	8,382.884	366.128	3,900.026	9,417.352
	(3.53)**	(4.72)**	(4.87)**	(2.29)*	(3.07)**	(4.66)**
_cons	2,334.447	4,289.860	7,628.133	2,021.908	3,792.105	5,196.265
	(17.07)**	(6.02)**	(4.56)**	(13.86)**	(3.03)**	(2.61)**
N	1,469	1,410	1,731	1,571	1,467	1,614

1959-1962

1963-1966
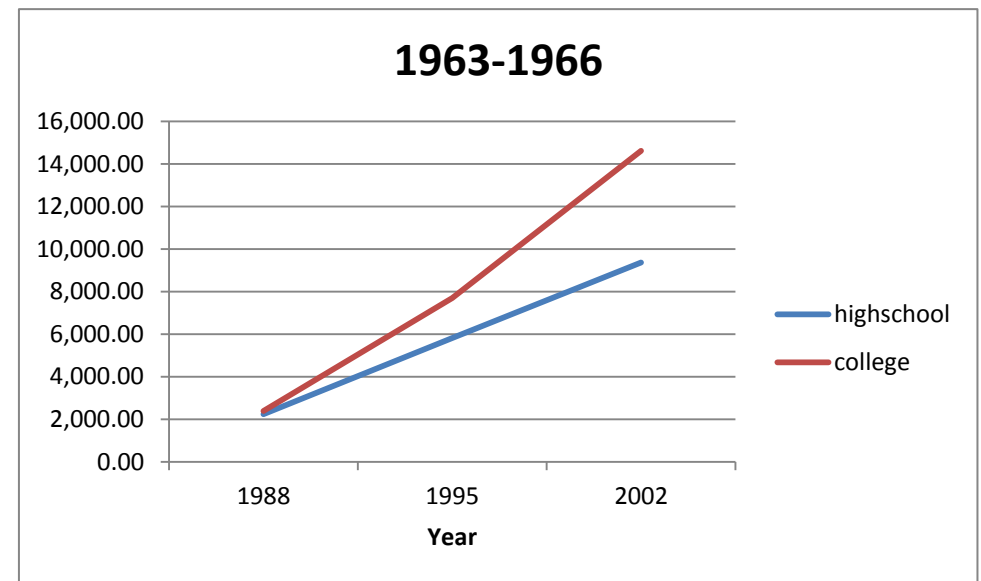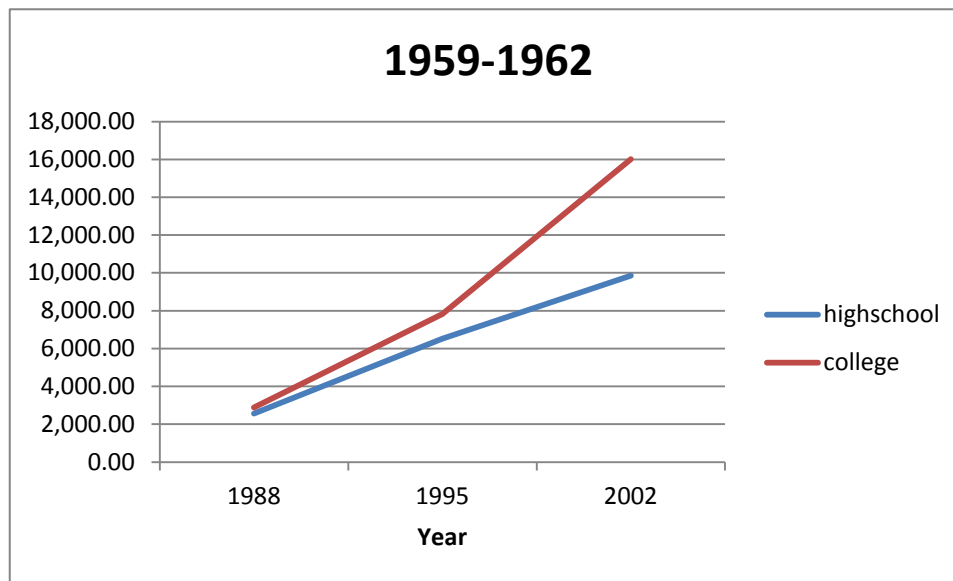
Table 2.4:

TotalIncome	1967-1970		
	1988	1995	2002
highschool	417.725	2,034.943	4,131.889
	(2.34)*	(1.72)	(2.67)**
college	1,151.768	3,153.025	9,150.147
	(4.52)**	(2.63)**	(5.88)**
_cons	1,531.980	3,145.100	4,625.636
	(8.73)**	(2.69)**	(3.03)**
N	1,182	979	1,337
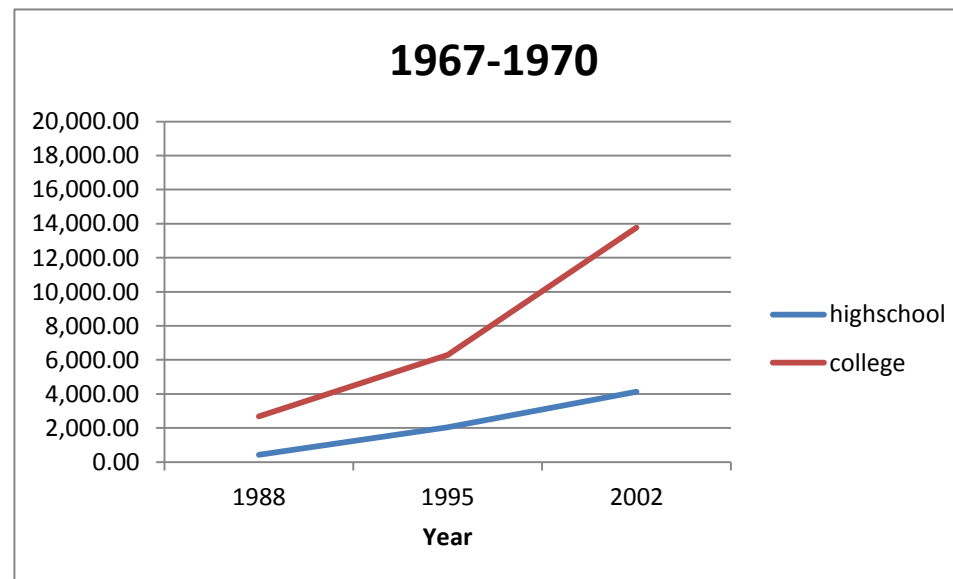
Table 2.5:

TotalIncome	1971-1974		1975-1977	
	1995	2002	1995	2002
highschool	1,732.118	3,719.663	427.443	3,530.309
	(0.98)	(1.14)	(0.88)	(1.11)
college	2,555.411	7,920.153		8,895.060
	(1.43)	(2.41)*		(2.78)**
_cons	2,923.548	4,696.850	2,542.177	3,618.333
	(1.66)	(1.45)	(5.62)**	(1.15)
N	890	869	332	484

* $p<0.05$; ** $p<0.01$
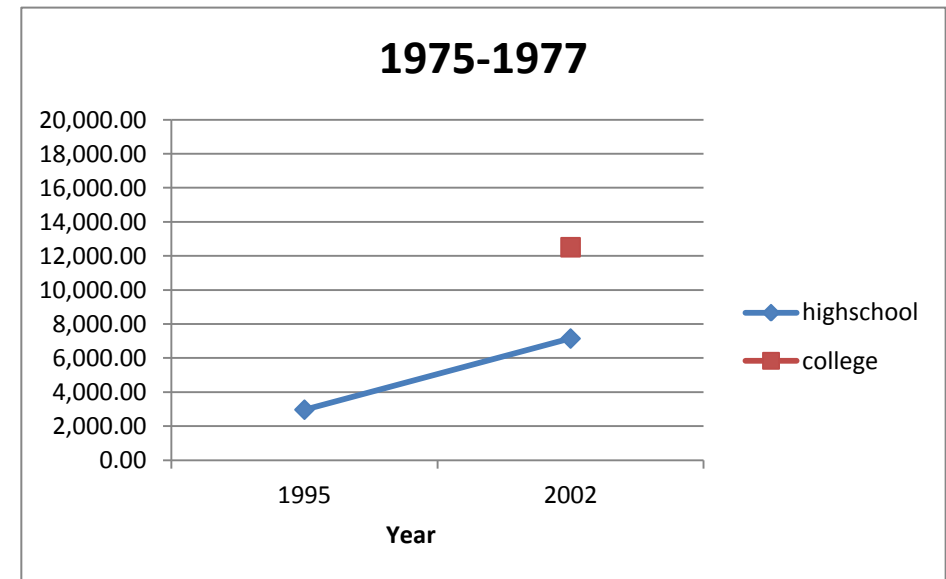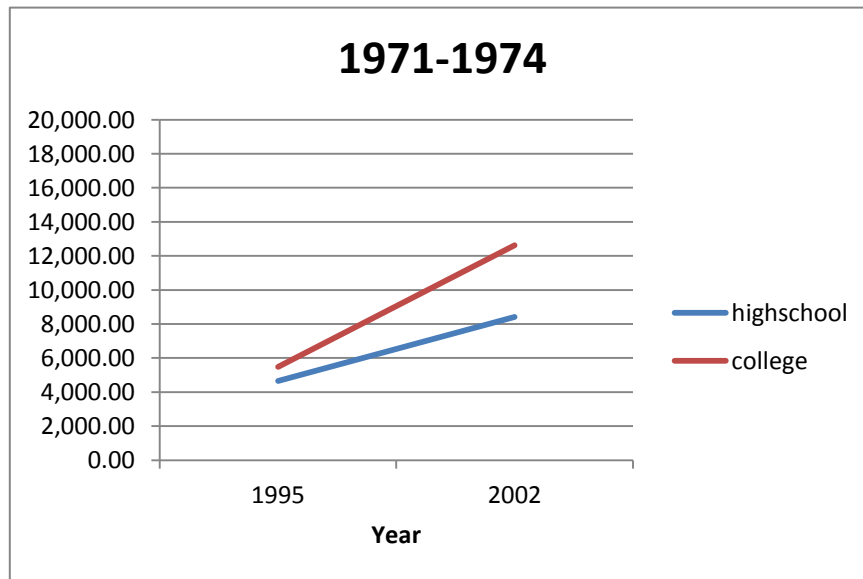
3. Gender groups

Table 3.1:

Totalincome1988	Male	Female	Both	Interaction
highschool	-377.080	76.032	-129.071	86.877
	(7.60)**	(1.88)	(4.06)**	(2.04)*
college	306.303	674.841	515.409	567.139
	(5.20)**	(10.97)**	(12.42)**	(10.42)**
Male			470.257	855.821
			(22.35)**	(14.52)**
MaleHighschool				-475.183
				(7.52)**
MaleCollege				33.457
				(0.39)
_cons	3,647.771	2,791.692	2,962.624	2,791.950
	(78.78)**	(75.34)**	(96.12)**	(71.18)**
N	9,068	8,303	17,377	17,377

Table 3.2:

Totalincome1995	Male	Female	Both	Interaction
highschool	721.043	1,640.509	1,341.745	1,722.117
	(2.56)*	(9.28)**	(8.69)**	(9.10)**
college	2,262.286	3,624.719	3,050.949	3,251.130
	(7.63)**	(16.97)**	(17.68)**	(15.50)**
Male			1,223.410	2,167.706
			(14.56)**	(7.00)**
MaleHighschool				-1,091.619
				(3.39)**
MaleCollege				-226.424
				(0.60)
_cons	6,645.533	4,477.827	4,788.362	4,477.827
	(24.51)**	(27.13)**	(32.29)**	(25.20)**
N	6,839	6,946	13,785	13,785

Table 3.3:

Totalincome2002	Male	Female	Both	Interaction
highschool	1,990.931	2,930.408	2,547.003	2,930.408
	(3.22)**	(7.68)**	(7.36)**	(6.56)**
college	7,204.574	7,685.952	7,551.466	7,685.952
	(11.37)**	(18.80)**	(20.84)**	(16.06)**
Male			2,617.071	3,386.939
			(17.94)**	(4.95)**
MaleHighschool				-939.477
				(1.33)
MaleCollege				-481.377
				(0.65)
_cons	9,024.848	5,637.908	5,940.828	5,637.908
	(15.02)**	(15.37)**	(17.50)**	(13.13)**
N	6,349	6,309	12,658	12,658

Appendix Tables

Appendix Tables Set A: Regression results of total personal income on education levels and work experience

1. Age groups in the same survey year(with work experience)

Appendix Table 1.1

Totalincome1988	18~30	31~40	41~50	51~60
highschool	318.129	165.518	474.866	619.939
	(3.86)**	(3.32)**	(8.88)**	(7.59)**
college	845.469	574.985	1,239.015	1,255.452
	(7.57)**	(6.40)**	(14.48)**	(10.88)**
_cons	2,013.858	2,958.649	3,249.779	3,679.109
	(24.84)**	(62.78)**	(68.84)**	(53.31)**
N	4,775	6,223	4,423	1,956

Appendix Table 1.2:

Totalincome1995	18~30	31~40	41~50	51~60
highschool	1,897.820	1,715.328	1,684.640	2,481.702
	(1.86)	(3.88)**	(6.82)**	(10.02)**
college	4,189.616	3,588.352	3,762.343	5,615.949
	(3.91)**	(6.86)**	(9.55)**	(16.29)**
workingexp	179.707	128.724	113.904	141.251
	(7.80)**	(7.91)**	(7.67)**	(10.24)**
_cons	2,006.857	3,108.259	3,335.410	733.306
	(1.94)	(6.06)**	(7.82)**	(1.61)
N	2,696	4,230	4,172	2,442

Appendix Table 1.3:

Totalincome2002	22~30	31~40	41~50	51~60
highschool	3,468.665	2,989.000	2,974.434	2,477.495
	(1.06)	(1.94)	(4.13)**	(2.54)*
college	6,859.129	7,706.230	9,238.751	8,446.309
	(2.09)*	(4.98)**	(12.24)**	(8.18)**
workingexp	46.866	127.942	232.864	205.853
	(0.87)	(4.12)**	(9.32)**	(6.34)**
_cons	4,814.161	4,909.199	2,374.915	3,798.438
	(1.46)	(3.06)**	(2.59)**	(2.84)**
N	1,340	3,454	3,683	1,326

2. Age groups across time (with work experience)

Appendix Table 2.1:

TotalIncome	1942-1946			1947-1950		
	1988	1995	2002	1988	1995	2002
highschool	496.525	2,265.434	2,106.820	299.391	1,324.148	2,721.371
	(6.69)**	(5.77)**	(1.04)	(3.60)**	(3.94)**	(2.13)*
college	1,217.626	5,188.732	7,893.863	605.891	3,089.195	8,884.174
	(9.87)**	(9.71)**	(3.75)**	(3.76)**	(5.54)**	(6.61)**
workingexp		135.230	242.767		144.220	193.115
		(5.60)**	(4.18)**		(6.63)**	(4.15)**
_cons	3,169.063	1,635.319	2,753.274	3,091.474	2,777.643	3,847.389
	(47.92)**	(2.15)*	(0.99)	(40.85)**	(4.54)**	(2.16)*
N	2,190	1,317	331	2,403	1,595	742

Appendix Table 2.2:

TotalIncome	1951-1954			1955-1958		
	1988	1995	2002	1988	1995	2002
highschool	206.630	1,610.068	2,359.633	226.086	1,586.009	3,656.283
	(3.37)**	(3.91)**	(2.38)*	(2.38)*	(2.51)*	(3.04)**
college	648.811	3,541.045	8,557.847	801.865	3,080.051	10,068.574
	(5.87)**	(5.41)**	(8.00)**	(5.75)**	(3.81)**	(7.97)**
workingexp		107.726	229.598		142.279	283.108
		(4.10)**	(5.73)**		(4.38)**	(6.32)**
_cons	2,886.764	3,704.797	3,120.428	2,669.591	3,149.167	414.968
	(49.62)**	(5.26)**	(2.22)*	(28.86)**	(3.74)**	(0.27)
N	2,618	2,016	1,336	2,285	1,971	1,594

Appendix Table 2.3:

TotalIncome	1959-1962			1963-1966		
	1988	1995	2002	1988	1995	2002
highschool	244.121	2,222.127	1,169.074	224.511	1,897.553	4,322.464
	(1.75)	(3.03)**	(0.59)	(1.52)	(1.41)	(1.79)
college	716.323	4,206.865	6,775.134	499.772	4,842.834	8,910.167
	(4.00)**	(4.94)**	(3.39)**	(2.78)**	(3.43)**	(3.69)**
workingexp		83.886	159.228		48.275	46.516
		(2.78)**	(2.67)**		(1.15)	(0.86)
_cons	2,334.447	3,152.513	6,151.545	2,021.908	3,659.983	4,992.270
	(17.06)**	(3.73)**	(2.77)**	(13.87)**	(2.54)*	(1.95)
N	1,469	1,404	1,533	1,571	1,453	1,474

Appendix Table 2.4:

TotalIncome	1967-1970		
	1988	1995	2002
highschool	442.424	2,038.914	4,328.384
	(2.46)*	(1.55)	(2.24)*
college	409.484	4,109.001	8,998.934
	(0.93)	(2.94)**	(4.65)**
workingexp		131.542	122.110
		(3.30)**	(2.11)*
_cons	1,531.980	2,301.102	3,437.829
	(8.67)**	(1.67)	(1.66)
N	1,182	959	1,215

Appendix Table 2.5:

TotalIncome	1971-1974		1975-1977	
	1995	2002	1995	2002
highschool	1,526.040	4,453.933	1,999.518	2,390.356
	(0.79)	(1.18)	(1.70)	(0.53)
college	1,647.463	8,338.033		7,160.147
	(0.81)	(2.20)*		(1.59)
workingexp	53.869	101.597	522.810	-150.892
	(0.86)	(1.02)	(4.74)**	(1.45)
_cons	3,157.105	3,837.155	299.235	6,651.719
	(1.63)	(0.97)	(0.26)	(1.47)
N	863	774	276	433

3. Gender groups(with work experience)

Appendix Table 3.1:

Totalincome1988	Male	Female	Both	EduReturnDifference
highschool	-338.095	101.511	-97.925	100.723
	(6.87)**	(2.52)*	(3.10)**	(2.36)*
college	600.596	955.558	806.242	956.926
	(8.76)**	(11.04)**	(15.67)**	(10.45)**
Male			476.256	855.821
			(22.69)**	(14.49)**
MaleHighschool				-438.817
				(6.92)**
MaleCollege				-356.331
				(3.17)**
_cons	3,647.771	2,791.692	2,959.969	2,791.950
	(78.88)**	(75.25)**	(96.09)**	(71.06)**
N	9,068	8,303	17,377	17,377

Appendix Table 3.2:

Totalincome1995	Male	Female	Both	EduReturnDifference
highschool	1,966.170	2,234.358	2,147.332	2,286.439
	(7.11)**	(12.42)**	(13.89)**	(11.99)**
college	3,984.288	4,275.323	4,177.490	4,332.520
	(12.10)**	(14.24)**	(19.74)**	(13.57)**
workingexp	123.516	102.706	114.260	114.018
	(20.87)**	(17.94)**	(27.75)**	(27.66)**
Male			1,031.687	1,404.450
			(12.45)**	(4.56)**
MaleHighschool				-399.955
				(1.25)
MaleCollege				-415.846
				(0.94)
_cons	3,107.859	2,245.760	2,100.903	1,980.094
	(9.86)**	(10.44)**	(11.70)**	(9.72)**
N	6,748	6,792	13,540	13,540

Appendix Table 3.3:

Totalincome2002	Male	Female	Both	EduReturnDifference
highschool	2,875.814	3,138.512	3,029.838	3,141.410
	(3.74)**	(4.44)**	(5.70)**	(3.86)**
college	8,242.274	7,781.974	8,086.052	7,729.205
	(10.51)**	(10.78)**	(14.89)**	(9.30)**
workingexp	170.213	198.787	181.762	181.753
	(12.90)**	(15.63)**	(19.53)**	(19.51)**
Male			1,681.200	1,618.397
			(9.64)**	(1.53)
MaleHighschool				-211.260
				(0.20)
MaleCollege				604.386
				(0.55)
_cons	4,937.198	2,667.958	2,963.532	2,999.272
	(5.92)**	(3.62)**	(5.22)**	(3.66)**
N	5,458	4,345	9,803	9,803

Appendix Tables Set B: Regression results of log total personal income on education levels

Appendix Table 1.1.1:

LGTI1988	18~30	31~40	41~50	51~60
highschool	0.106	0.079	0.138	0.159
	(3.63)**	(6.58)**	(12.97)**	(10.25)**
college	0.263	0.193	0.305	0.297
	(8.03)**	(12.29)**	(21.55)**	(15.50)**
_cons	7.580	7.921	8.035	8.163
	(264.67)**	(699.44)**	(863.31)**	(633.32)**
N	4,764	6,217	4,417	1,950

Appendix Table 1.2.1:

LGTI1995	18~30	31~40	41~50	51~60
highschool	0.453	0.434	0.332	0.525
	(2.32)*	(8.02)**	(11.56)**	(17.15)**
college	0.734	0.676	0.626	0.937
	(3.71)**	(12.01)**	(18.66)**	(25.22)**
_cons	7.690	8.226	8.461	8.248
	(39.66)**	(154.90)**	(315.31)**	(315.70)**
N	2,787	4,264	4,222	2,494

Appendix Table 1.3.1:

LGTI2002	22~30	31~40	41~50	51~60
highschool	0.768	0.705	0.381	0.389
	(3.18)**	(6.62)**	(7.19)**	(9.78)**
college	1.182	1.249	0.972	0.925
	(4.89)**	(11.65)**	(17.10)**	(19.81)**
_cons	7.909	8.181	8.617	8.693
	(33.02)**	(77.62)**	(167.38)**	(236.31)**
N	1,467	3,744	4,514	2,754

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