

Chinese Student Migrants to the US: 1985-2006

Kun Zhao

Capstone advisor: Robert Feinberg

Spring 2009

Graduating with General University Honors

## Chinese Student Migrants to the US: 1985 – 2006

### Abstract:

International educational exchange between US and China has become a hot topic in both Chinese and American academia in recent years. As more Chinese students choose to come to the US for higher education, more American students pick China as their destinations for studying abroad. It is believed that Chinese economic development has created the opportunities for people around the world getting to know China, and for Chinese students going out of the country to see the world.

This paper analyzes statistics on Chinese student enrollment in the US higher education, and the factors that influence the increase of the enrollment over the past 20 years. As a result, number of Chinese students enrolled in US undergraduate programs is positively related to US undergraduate tuition, while the number of Chinese students enrolled in US graduate programs is highly related to urban disposable income. It is concluded that Chinese undergraduate students decide to come to the US mostly upon the educational cost, and graduate students look more into the future return of education.

## Chinese Student Migrants to the US: 1985 – 2006

### Introduction

As globalization plays a more and more important role in world economic development, openness of all the countries around the world, in terms of international trade, communications etc, has increased over the years. As one of the benefiterers of globalization, educational exchange between countries has expanded rapidly in both volume and varieties.

Educational exchange between mainland of China and U.S. become a hot topic in both U.S. and Chinese academia in recent years. In academic year 2006-2007, the number of U.S. students going to mainland of China increased by 25.3 percent from previous year, to the total of 11,064 students. China became the number five on the list of top destinations of U.S. study abroad students (data from Open Doors).

On the other hand, United States remains the top one destination of Chinese students studying abroad. In academic year 2007-2008, there were 81,127 students from mainland of China studying in the US, up to a 19.8 percent increase from previous year. About 94.2 percent of these students were enrolled in US undergraduate, graduate programs or Optional Practical Training (OPT).

The number of students from mainland of China in U.S. higher education has grown rapidly, especially in educational institutes along east and west coasts. For example, at American University (AU), from statistics by International Students and Scholars services, the number of international students from mainland of China doubled, from around 40 to 80, in academic year 2008-2009 from the previous year. The

numbers of students increased in regular degree programs and Abroad@AU one semester or one year exchange programs for both undergraduate and graduate students.

Chinese students in the US as international students usually hold non-immigration visas (i.e. F, J, or M visas), regulated by working restrictions, etc. Most graduate students from China receive partial or full scholarships from the institutes enrolled, while undergraduate students do not usually receive full scholarships or financial aid. Different from labor migrants who are making money, student migrants are spending money on education investment, probably a lot more than they will be able to earn within a few years after finishing their education.

Students with non-immigration visas are expected to go back to China after they complete their education in the US. If they choose to go back, they need to compete with thousands of local graduates each year and with those who come back to China from aboard holding diplomas at the same level of degrees. If they choose to stay in the US for some time, they need to compete with other international students for working visas, and also with Native Americans, who have advantages in identity status, language, and cultural background, on job-hunting.

Back to 50 years ago, hardly anyone from China would go to the US for higher education; staying with the same group of people to help with the development of the country was good enough. But 50 years later, more and more Chinese students come to the US, taking the challenge of high cost of living and education expenses, long distance from home, unfamiliarity with the environment and culture. They bring Chinese perceptions into the diversity of US culture, and take American notions back home. Educational exchange has become an important partner of traditional education in both countries.

## Background

In the records of Institution of International Education, no Chinese students were sent to the US between 1950 and 1979. From 1980, the second year after economic reform began, China restarted to send students to the US. In four years, China became the number eleventh on the list of leading senders of students to the US. By the academic year 1986-1987, China became one of the top three senders of international students to the US. During 1988 – 1994 and 1998 – 2000, China was the leading sender. The number one place was overtaken by India in 2001, and China remains in the second place since then.

Foreign students in the US hold non-immigration visas (type F, J or M), distinguished from permanent immigrants. The policies, directly related to non-immigration as well as permanent immigration in the US, affect the number of student migrants. It is well understood that foreign students have the potential to be permanent immigrants in the future. For Chinese student migrants, immigration policies have had a rather complex pattern.

On the US side, Philip Martin and Elizabeth Midgley showed that immigration to the US has had four major waves since 1820. Between 1882 and 1943, US government had “severe restrictions” on immigration from China. They refer the time post 1965 as the fourth wave immigration. After the 60 year ban on Chinese immigrants by the Immigration Act of 1882, Civil Rights Act of 1964 and the Immigration and Nationality Act of 1965 brought new possibilities to Chinese immigrants. In 1965, US abolished national origin quotas as bases for immigration. During the immigration reform from 1980 to 1996, the restrictions of immigrants were further adjusted, and the annual immigration ceiling was raised in 1990.

However, in 1996, immigration legislations tightened the access of immigrations to welfare, and raised the requirement of their income, so discouraged illegal and legal but low-income immigrants from outside the US. In 2001, 9/11 attack created an uncertain environment both socially and politically. In particular, change involving “extensive and ongoing review of visa issuing practices” (Embassy of United States) had blocked a lot of Chinese students from going to US in the short run.

On the side of mainland China, since the founding of the country in 1949, “the door was closed to relationships and interaction with western countries for more than 30 years” (Dudley Poston and Hua Luo). From 1949 to 1978, Chinese international migration policy banned the immigration to non-socialist countries. After Chinese economic reform in 1978, China re-opened its gate to the whole world, when its intercultural communication with the US began.

In their article, Dudley Poston and Hua Luo defined foreign student as temporary immigration. The number of Chinese students increased six-fold in 20 years from 1980s to early 2000, but the trend had “increased, decreased, and then increased again”. The increase in number of student becomes steeper after early 1990s. Except for some secondary school programs of vocational, non-academic studies or other English training studies, most student immigrants come to the US for higher education.

As the number of Chinese students in the US increases, Chinese universities have an approximately 30 percent growth in the total number of enrollment at all levels each year since 1999, and graduates at all levels quadrupled in the past 6 years (Li, Y. etc, 2008). This huge increase, as Y. Li described, was driven by Chinese education reform in 1999, a strategic decision made by high policy levels rather than demand. This educational reform in China also brought more educational funds from Chinese

government, more accessibility of higher education for students from urban and rural households, and more quality-oriented institutions measured by international ranking, publications of papers, etc.

The rapid expansion of Chinese higher education institutes also brings about challenges (Levin and Xu, 2005). Though trying to transforming from quantity- to quality-oriented education, the average size of classes and student-teacher ratio, student loan repayment, the quality of faculties teaching and research can hardly be well controlled with the huge increase in students.

American higher education is an opportunity of high quality education for Chinese students. Chen revealed that since 2001, the US has experienced a decline in international students, because of the tightened US immigration policy and probably student preference. Specially, overall decline of student enrollment from China three consecutive years after 2001 was 8 percent. He found out, through two surveys in Peking University Master programs in 1999 and in 2004, low quality students in terms of rankings and projects prefer to go to aboard more than others in 1999, while in 2004, student rankings and projects are not significant factors anymore.

For Chinese economy, an increase in number of Chinese students attending higher education programs can absorb some potential unemployment in the short run. The return of higher education directly influences people's decisions. Chinese students in the US with non-immigration visas are expected to go back to China after completing their education. Haizheng Li stated the return of education in China using 1995 data was higher than what was estimated in 1980s, and the rate of return was increasing over time, but the actual rate of return was still as low as 5.4 percent, with higher education valued considerably higher.

W. Li concluded long term family background and short term financial barrier can impact higher education attendance choices. Moreover, “net prices in elite universities” are clearly lower than medium quality universities, which are again, lower than low quality universities and colleges in China. “High cost and low assistance” is defined as low quality.

Attending American higher education takes even a bigger risk than Chinese education in terms of cost. China “unified ‘dual’ exchange regime into a single one” on January 1<sup>st</sup>, 1994(Gang). The official exchange rate (RMB – US dollar) rose from 5.8 Yuan/Dollar to 8.7 Yuan / Dollar overnight. Even though 80 percent of the foreign exchange trading volume was at the market rate, about 8.7 Yuan /Dollar, at the end of 1993, the official RMB depreciation almost doubled the cost of US higher education for Chinese students since year 1994. The rate of return for studying in the US used to be very high comparing with Chinese higher education, i.e. students with US higher education degrees could have better English language skills and more advanced technology skills. Students back from the US used to have much better chance to find jobs or get high paid jobs. But this advantage is diminishing over time, as more and more Chinese students hold an American degree, and quality of Chinese higher education, in terms of English education and major specific technology level, rises over the years.

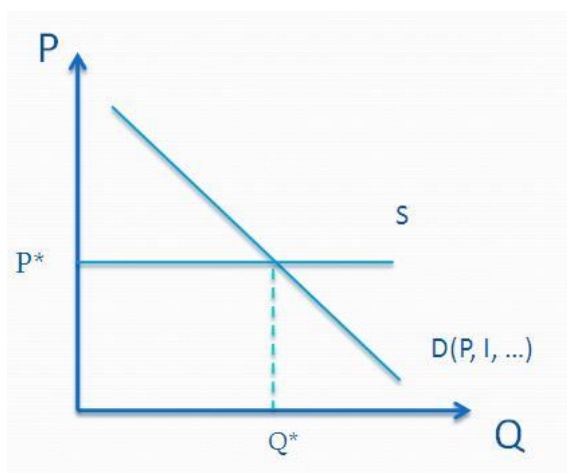
### Economic Model

The theoretical model considered in this paper is the traditional supply and demand model. One side is the supply of US higher education to Chinese students. And the other side is the demand of Chinese students who are willing and able to attend US higher education. The intersection of two curves gives the predicted equilibrium quantity, number of Chinese students in the US higher education.

In this specific case, the supply of US higher education is approximated to be infinite elastic. Because number of Chinese students accounts for a small portion of total US higher education enrollment, the supply curve, facing by Chinese students, is considered to be horizontal for simplicity, at a given price, i.e. tuition, living cost, and other required or related fees.

The demand, on the other hand, is expected to be steep, with very high elasticity. Chinese students can more easily choose to stay in China for higher education, which is more accessible for a typical Chinese household. The high cost of US higher education, without scholarship or financial aid, is simply not affordable for most Chinese people.

In the analysis, the demand curve is estimated, in terms of prices of education at different level, potential budget constraints, and other factors.



### Data Description

The student enrollment data I use in this paper are drawn from Open Doors. Open Doors, known as the statistical report section of Institute of International Education, gives comprehensive annual statistical reports on international students and scholars in the United State, and American students studying board, over the past 55 years. Open Doors obtains its census data through survey sent to over 2,800 US credit institutions each year, collecting statistics only on students enrolled at US colleges or universities. Open Doors source is regarded as the one with the highest accuracy and authority in the US, on international educational exchange.

Chinese student enrollments over the years in US higher education are shown in Table 1. In some years, numbers of students enrolled in undergraduate and graduate level programs are calculated by multiplying the total numbers of enrolled Chinese students in the US by the percentages of undergraduate and graduate enrollments in total enrollments (provided by Open Doors). Shown in Figure 1, the total number of Chinese students enrolled in US higher education increased from about 14,000 in academic year 1985-1986, to about 65,000 in academic year 2006-2007. Numbers of enrolled graduate students always accounts for the majority, most of the time about 80 percent, of total Chinese students enrolled in US higher education, so dominates the trend of Chinese student total enrollment.

The first decline in the total enrollment occurred in 1994, when official RMB/USD exchange rate suddenly rose. The second decline came right after 9/11 attack in 2001, when US tightened visa issuing process. So in the later analysis, two dummy variables were created. Exchange rate dummy is set to equal one after year 1994, and zero from year 1985 to 1993. Sep-11 dummy is set to be one since year 2002, and zero

from 1985 to 2001. Because student enrollment process normally finishes before September each year, the influence of 9/11 and related policy changes would not appear until the next round of applications started.

Figure 2 shows the percentage of enrolled Chinese students in total international students in the US. As we can see from the graph, back in academic year 1985 - 1986, number of enrolled Chinese students accounts only for about 4 percent of US total international students, but since year 1998, numbers of Chinese students have always accounted 10 to 11 percent share of total international students in the US. In year 1994, there is a significant drop in the percentages share of Chinese students. I suspect this change to be the effect of official RMB depreciation mentioned above. Also, we do not see a 9/11 effect on this graph, which suggests that the related policy changes cutting off the Chinese students enrollment in the US, approximately scaled down the overall enrollment of international students at the same level.

Chinese students enrolled in US undergraduate and graduate programs are shown separately in Figure 3 and Figure 4. As is mentioned before, Chinese undergraduate students in the US do not normally receive full scholarship or financial aid, while graduate students normally received financial packages that cover more than half of the tuition and living expenses. So the trends of undergraduate and graduate student enrollments are expected to be different in terms of student income situation and US required educational expenses.

National Center for Education Statistics (NCES) publishes the statistics of education at all levels around the nation. Table 2 shows the average cost of undergraduate and graduate programs over the years. For undergraduate programs, the annual averages of tuition, dormitory, and boarding expenses, are the weighted average

of required charges for full-time students by two- and four – year, public and private degree-granting institutions. Because the distribution of types of institutions that Chinese students enrolled is unknown, the average expense of all institutions is used as the variable in the later analysis.

For graduate programs, the annual average tuitions are the weighted averages of tuition and required fees for full-time graduate and first-professional degree-granting institutions. Since graduate students are not required to live on campus or buy meal plans at schools, US consumer price index (CPI) measured on a comparable basis, drawn from International Monetary Fund (IMF) database, is included to represent living expenses for Chinese graduate students in the US. Finally, all the educational expenses and CPI data are converted into RMB, by using annual exchange rate drawn from Federal Reserve. Therefore, required educational expenses and Chinese income level will be at the same unit of measurement.

National Bureau of Statistics of China (NBSC) publishes annual reports each year, on Chinese economic performance by the spring of following year. These reports include census data on measurements of people's livelihood, such as per capita income and expenditure. Since most Chinese students coming to the US for higher education are from relatively high income families in urban areas, and the income gap between urban and rural places in China is substantial, data on income and expenditure of urban households specifically are drawn.

The Chinese urban household per capita disposable income and per capita educational expenditures are shown in Table 3 and 4. Urban household per capita educational expenditures are estimated by the differences, subtracting values of “durable consumer goods for recreational use” from “expenditures of recreation,

education and cultural services”. Since year 1995, data on per capita disposable income are categorized further into five income levels, and educational expenditures are separated shown under average total consumption expenditures.

World Development Indicators (WDI), as one of the data & statistics sections under the World Bank, provides macroeconomic measures of each country around the world. Data of per capita GDP in China are drawn from WDI, and converted into RMB, representing the overall income level in China regardless of the rural and urban area income indifferences.

### Empirical Results

Econometric model used in this paper is the simple linear regression model. Variable selection process was completed by SPSS backward linear regression. This process drops one variable at a time out of all independent variables, until the significance levels of all remaining variables satisfies the pre-set requirement.

Chinese student enrollments in US undergraduate and graduate programs are two separate dependent variables. The independent variables are picked from US educational and related expenses (including tuition, dormitory, board expenses, etc), US CPI, Chinese urban per capita disposable income, Chinese per capita GDP, exchange rate dummy, and September 11 dummy. Regressions are categorized into four sets. Relevant data are assigned into each set by level of programs (undergraduate and graduate), and available data range (year 1985 – 2006 or 1996 – 2006).

Numbers of Chinese students enrolled in US undergraduate programs, over the 22 year period 1985-2006, is regressed against the independent variables mentioned

above. Because there was a huge abnormal drop in undergraduate enrollment, year 1988 was drop before the analysis. As is shown in table 5, numbers of Chinese undergraduate students are not statistically significant related to Chinese urban per capita disposable income, board fees, US consumer price index, dropped in the first three models. So it is concluded that undergraduate enrollment is not related to Chinese urban per capita disposable income, board, or US CPI, for meals account for a small portion of total cost for an undergraduate student.

It is weakly related (significant at 5 percent level in Model 4), positively to Chinese per capita GDP, and negatively to September 11 dummy, as is suggested in Model 4 and 5. Undergraduate enrollment increases somewhat as the overall living condition rises in China. Also, 9/11 has had some negative effect on the enrollment. But the number of observations in the dataset is small, so the variables are dropped until only three independent variables left. R-squared and adjusted R-squared values remain above 0.9 throughout the variable picking process, without much change as is shown in model summary.

Undergraduate tuition, dormitory charges, and exchange rate dummy are the three most significant variables. Model 6 suggest that exchange rate change in 1994 did cause a significant drop in Chinese student enrolled in undergraduate programs. Also, the enrollment is negatively related to tuition, but positively related to dormitory fees. It is reasonable to explain that as the US undergraduate tuition increases, fewer students would want to come to US for undergraduate studies, because undergraduate students mostly need to pay for the major portion of the tuition and living expenses. However, the positive relation with dormitory charges seems to be suspicious. One explanation is undergraduate students are mostly required to live in dorms for the first year, but living

on campus is mandatory after the first year. This significant positive coefficient of dorm charge may suggest a strong linear relation between enrollment and dorm charge, but not necessarily be causation for one another.

Table 6 shows a further analysis of undergraduate enrollment from 1995 to 2006. Since tuition and dorm fees are significant from previous analysis, they are included in this round as well. Undergraduate enrollment is not related to urban income level, so urban household per capita educational expenditures by income level are used for analysis. Exchange rate change in 1994 was before this time period, so would not affect the trend, but 9/11 dummy may have. Model (1) shows that both undergraduate tuition and 9/11 have significant negative effect on undergraduate enrollment. Dorm charges are not significant related to the enrollment at 10 percent level in model (1). When dropping dorm variable in model (2), the remaining variables are still statistically significant without a big change in R-squared value, so dorm charges are dropped in the later models. Though urban per capita income is not significantly related to undergraduate enrollment, average urban per capita educational expenditure is significant. As the expenditure increases, more Chinese students come to US for undergraduate studies.

Model (3) – (9) include data of urban per capita educational expenditure of each income level households. Notice only the coefficient of high income (the ninth decile) in model (8) is significant. However, the coefficient is negative, the rate of increase in educational expenditure of high income households greater than the rate of increase in student enrollment. As is described earlier, this educational expenditure also includes “recreation” and “cultural services”, so may not be an exact measure of expenses on education. Moreover, as more students choose to go to Europe and other parts of the

world, the US is not the only destination for Chinese student studying abroad. More high income households may have chosen to send their children to other countries with looser immigration regulations, which may cause a negative effect on US undergraduate enrollment.

Table 7 shows the result of graduate enrollment regressed against independent variables described above. Undergraduate enrollment is also regarded as one of the potential independent variable in these set of regressions with four year time lag. The data set is taken from 1989 to 2006 because of the limitation of data range.

We see a drop since 1994 in graduate enrollment data, and continuous drop after 2001, but exchange rate dummy and 9/11 dummy was omitted first and second in the process, so neither exchange rate nor 9/11 effect on graduate enrollment is significant. Also, US consumer price index and graduate tuition are dropped in model 3 and 4. As is discussed earlier, graduate student usually receive full scholarship with tuition waived and stipend for living expenses, so educational expenses are not as important for graduate students.

Urban per capita disposable income, undergraduate enrollment, and Chinese per capita GDP are statistically significant (Model 5, Table 7). The increase in urban per capita disposable income has a positive effect on graduate student enrollment. As income increases, more people would like to come to the US for graduate studies, so the graduate enrollment increases as well.

As we have seen in Figure 3 and 4, the rate of change in undergraduate enrollment is higher than the rate of change in graduate enrollment in years after 1995, especially after 2001. Moreover, when Chinese students finish their undergraduate in the US, many students prefer to find a job and start earning money, instead of going to

graduate school. Also, students who have plan to go to graduate schools tend to find a job for one to two years to gain some work experience instead of going to graduate school directly. On the other hand, undergraduate students graduated from Chinese undergraduate program normally choose to come to the US attending graduate school right after their undergraduate studies. As more and more students enroll in US undergraduate programs each year, the graduate enrollment may have been affected by the different perceptions. All of the above may have caused the coefficient of undergraduate enrollment to be negative.

The coefficient shows that the increase of per capita GDP also has a negative effect on graduate student enrollment. One explanation may be that as the per capita GDP goes up, the normal return of the earnings of a typical job after undergraduate education, Chinese graduate education increases, while the return of the US graduate education is diminishing over time. As Chinese higher education becomes more accessible with higher quality, more people who want a Masters or higher degree choose to stay in China.

Table 8 shows further analysis on graduate student enrollment. Similar with Table 6, significant variables drawn from Table 7, US undergraduate enrollment, Chinese per capita GDP, and urban per capita disposable income are included in regressions, together with urban per capita average educational expenditures and 9/11 dummy. From Model (1), we can see that undergraduate enrollment, Chinese per capita GDP and average urban disposable income still have significant negative effects on graduate enrollment. Urban educational expenditure and 9/11 dummy are not significant. Exclude educational expenditure and 9/11 variables, shown in model (2), the significance of the three remaining variables stores, and R-squared value stayed above

0.9. Model (3) – (9) include data of urban per capita disposable income of each income level households. While the weighted average remains significant at 5 percent level, no one of the specific income level households was significant.

### Conclusion

In this paper, I have advanced the understanding of factors that influence the enrollment of Chinese students in the US higher education from 1985 to 2006. Higher education is separated into two categories, undergraduate and graduate programs. Analysis mainly focuses on US education prices (such as tuition, living expenses, etc.), and the income conditions of Chinese household. The significance of official change in exchange rate in 1994 and policy change after September 11, 2001 was also analyzed in both cases.

The result suggests that Chinese student enrollment in US undergraduate education is significantly negatively related to US tuition, but not related to Chinese urban disposable income. The enrollment dropped substantially after the official exchange rate rose in 1994, and dropped again after 9/11 incidence. In addition, undergraduate enrollment is positively related to average urban per capita educational expenditures, but negatively related to the educational expenses of the ninth decile households specifically.

On the other hand, numbers of Chinese students enrolled in the US graduate programs are not related to graduate tuition, but Chinese per capita GDP and urban per capita income. Neither exchange rate change nor 9/11 have a significant effect on graduate enrollment, so I conclude that students do not make decisions of continuing

graduate studies by the cost, but the return of education. Undergraduate enrollment has a negative influence on the graduate enrollment, which bring up a perception difference between US and Chinese undergraduate education.

As the global financial crisis spreads, more and more people decide to seek further education in order to prevent potential unemployment, which shift out the demand for education. Over the past few years, RMB has been adjusted several times, appreciated against US dollar, making the US higher education more affordable for Chinese students. Moreover, the world market continues to open up, which supports a more liberal environment for international educational exchange. Even though the future heading of Chinese student enrollment in the US graduate programs is ambiguous from the historical statistics, the undergraduate enrollment in the US is leading to another increase in the coming academic year. I expect an overall increase in the total number of Chinese student enrollment in the US.

Individuals making decisions are also based on personal preferences. The information spreading in China is not as fast and accurate as it is in a more developed country, so people can make decisions based on partial or misleading information. My data limitations prevent me from reaching the family background of the students, which may have a large impact habitual decision making. Also quantitative measurements on return of education would help to create a larger image of Chinese students' demand for higher education. Additional work is needed in the future.

### References:

- Chen, Yiu Por; “Skill-sorting, self-selectivity, and immigration policy regime change: Two surveys of Chinese graduate students’ Intention to study abroad”; Papers and Proceeding of American Economic Association, May 2005
- Gang, Yi; “Renminbi Exchange Rates and Relevant Institutional Factors”; Cato Journal, Vol. 28, No. 2 (Spring/Summer 2008); 187-196.
- Li, Haizheng; “Economic transition and returns to education in China”; Economics of Education Review 22, 2003; 317-328.
- Li, Yao and others eds.; “Higher Education Transformation in China and its Global Implications”; Policy Brief No 3, The Centre for International Governance Innovation; June 2008.
- Li, Wenli; “Family Background, financial constraints and higher education attendance in China”; Economics of Education Review 26, 2007.
- Martin, Philip and Midgley, Elizabeth; “Immigration to the United States”; Population, Vol. 54, No. 2 (June 1999); 3-44.
- Poston, L. Dudley and Luo, Hua; “Chinese Student and Labor Migration to the United States: Trends and Policies since the 1980s”; Conference on Global Competition for International Students, Georgetown University, Mar 31, 2006.
- Embassy of United States; “Non-immigration Visas – Student Visas”; U.S. department of State; May 1 2009
- <[http://beijing.usembassy-china.org.cn/studentvisa\\_overview.html](http://beijing.usembassy-china.org.cn/studentvisa_overview.html)>
- International Monetary Fund; April 22, 2009; May 1, 2009
- <<http://imf.org/external/data.htm>>

National Bureau of Statistics of China; “Yearbooks”, 1996-2007; March 20, 2009

<<http://www.stats.gov.cn/english/statisticaldata/yearlydata/>>

“Average undergraduate tuition and fees and room and board rates charged for full-time students in degree-granting institutions, by type and control of institution: 1964-65 through 2006-07” (Table 320); National Center for Education Statistics; July 2007; March 20 2009

<[http://nces.ed.gov/programs/digest/d07/tables/dt07\\_320.asp](http://nces.ed.gov/programs/digest/d07/tables/dt07_320.asp)>

Open Doors; “International Students by Academic Level and Place of Origin”, 2001 – 2007; Institute of International Education; March 20, 2009

<<http://opendoors.iienetwork.org/page/28633/>>

Open Doors; Report on International Educational Exchange, 1948-2004; Institute of International Education, April 2005

World Development Indicators; the World Bank Group; March 20 2009

<<http://www.worldbank.org/>> Path: Data & Research; Data; WDI & GDF online.

## Appendix:

Figure 1: Number of Chinese students enrolled in US higher education by level of degree

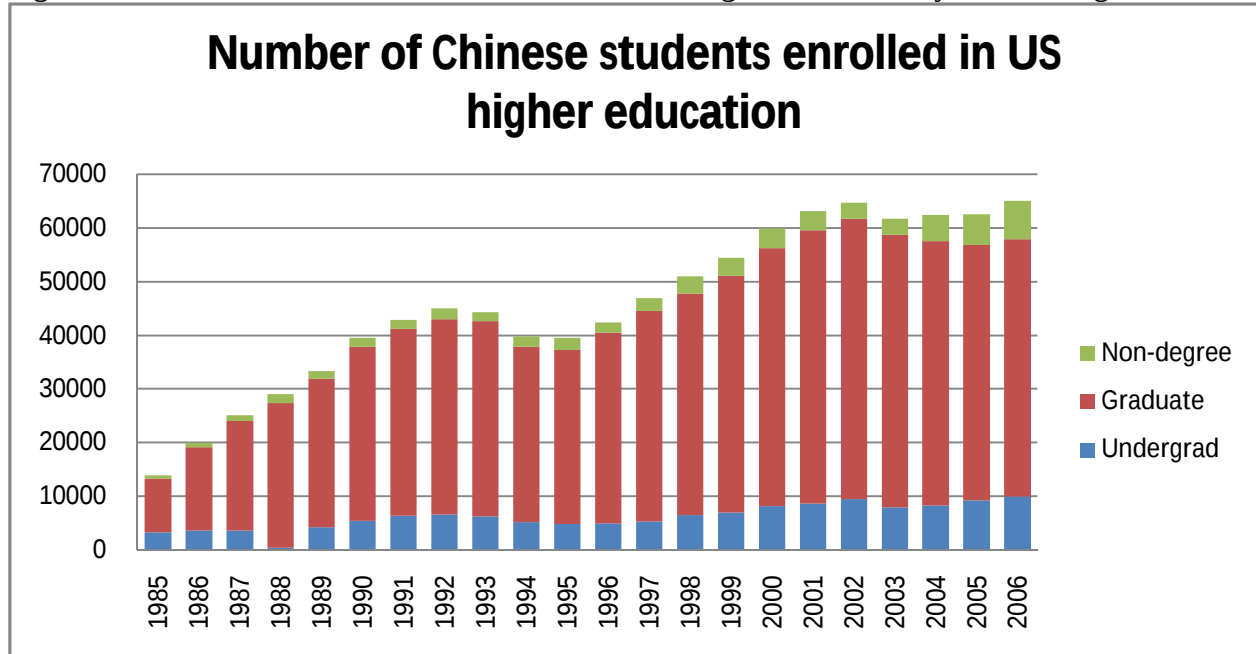


Figure 2: Total Chinese students as a percentage of total international students in the US

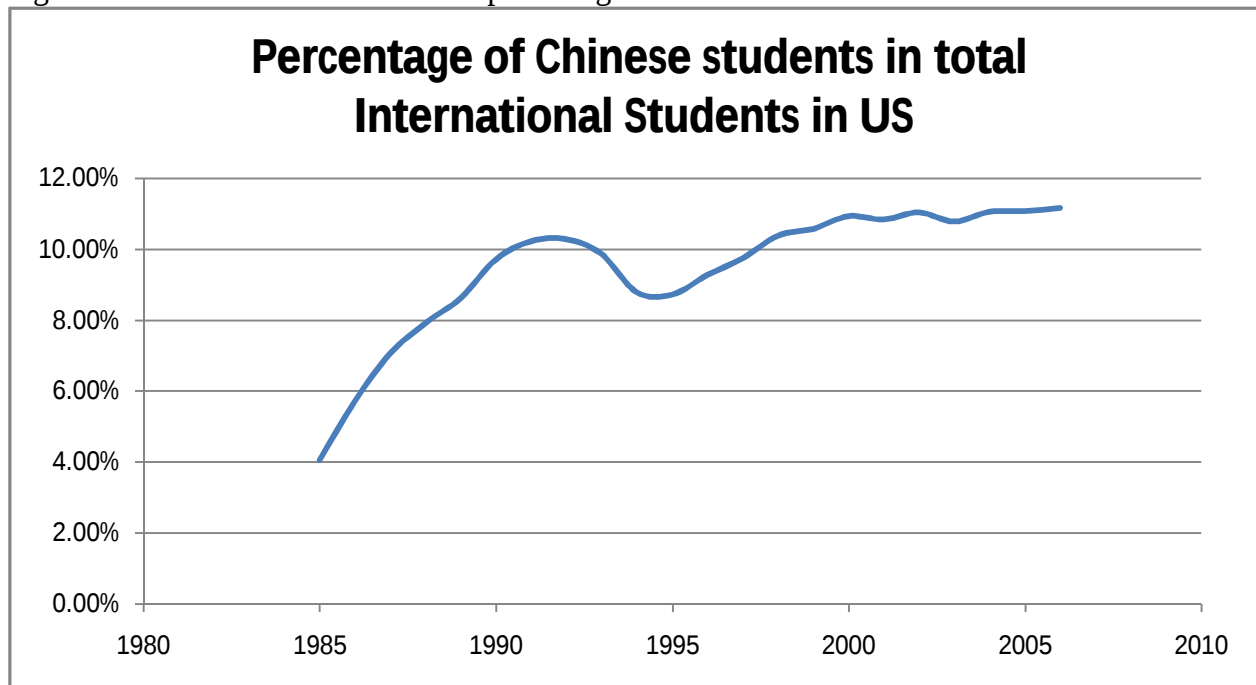


Figure 3: Number of Chinese students enrolled in US undergraduate programs

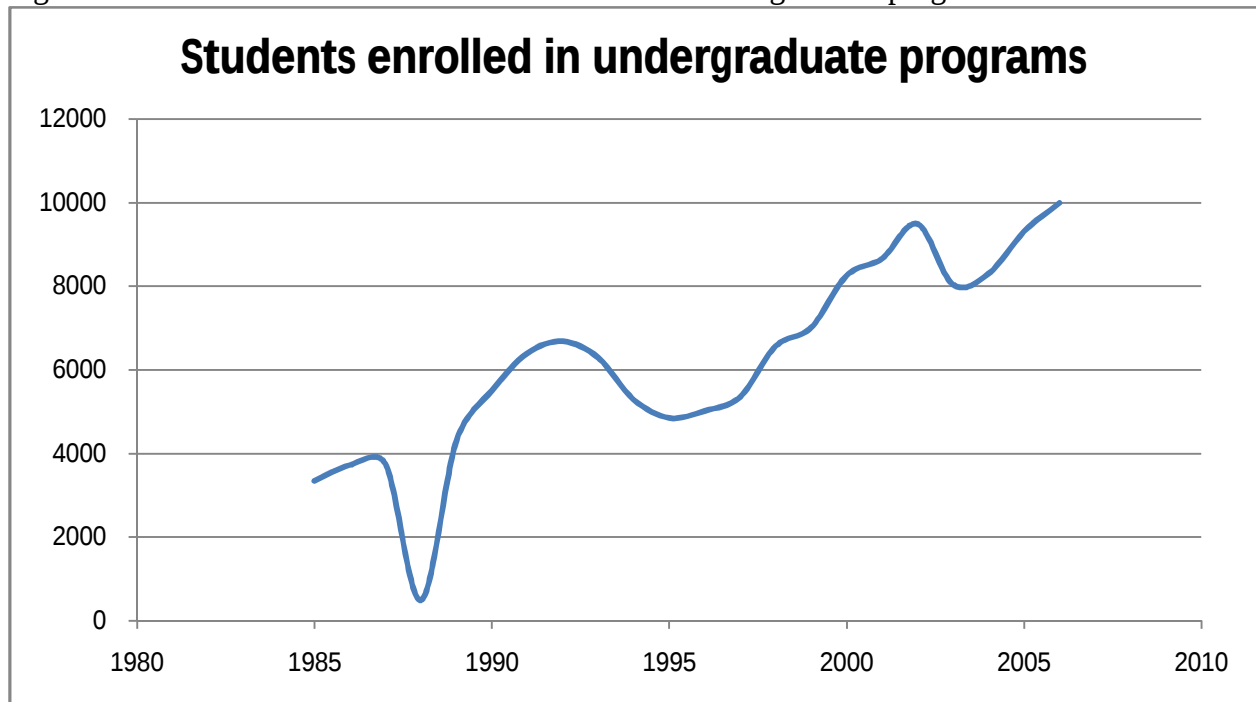


Figure 4: Chinese students enrolled in US graduate programs

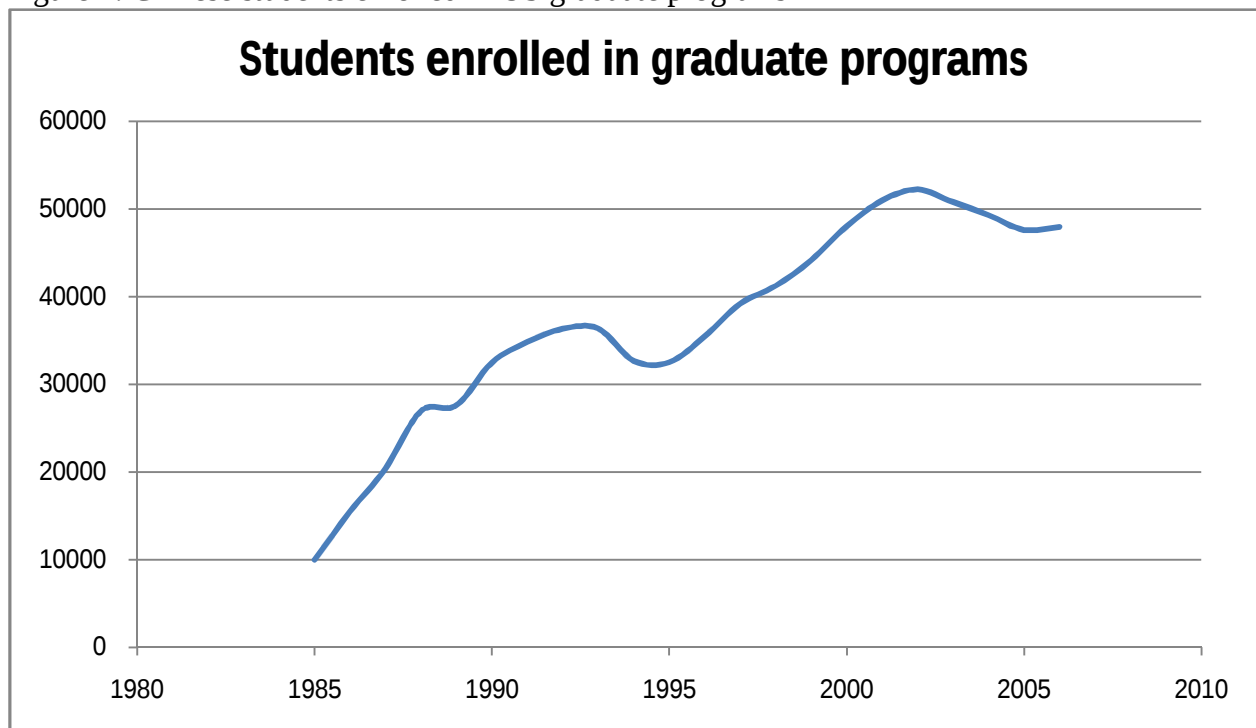


Table 1: Chinese Students Enrolled in US higher education

| Year | Total International Students enrolled in US <sup>1</sup> | Chinese Students Enrollment <sup>2</sup> |           |          |            | Percentage of Chinese Students in Total International Students |
|------|----------------------------------------------------------|------------------------------------------|-----------|----------|------------|----------------------------------------------------------------|
|      |                                                          | Total                                    | Undergrad | Graduate | Non-degree |                                                                |
| 1985 | 343777                                                   | 13980                                    | 3341      | 9982     | 657        | 4.07%                                                          |
| 1986 | 349609                                                   | 20030                                    | 3726      | 15463    | 841        | 5.73%                                                          |
| 1987 | 356187                                                   | 25170                                    | 3750      | 20388    | 1032       | 7.07%                                                          |
| 1988 | 366354                                                   | 29040                                    | 494       | 26949    | 1597       | 7.93%                                                          |
| 1989 | 386851                                                   | 33390                                    | 4307      | 27614    | 1469       | 8.63%                                                          |
| 1990 | 407529                                                   | 39600                                    | 5504      | 32472    | 1624       | 9.72%                                                          |
| 1991 | 419585                                                   | 42940                                    | 6398      | 34824    | 1718       | 10.23%                                                         |
| 1992 | 438618                                                   | 45126                                    | 6679      | 36326    | 2121       | 10.29%                                                         |
| 1993 | 449749                                                   | 44381                                    | 6287      | 36370    | 1724       | 9.87%                                                          |
| 1994 | 452635                                                   | 39783                                    | 5287      | 32679    | 1817       | 8.79%                                                          |
| 1995 | 453787                                                   | 39613                                    | 4851      | 32512    | 2250       | 8.73%                                                          |
| 1996 | 457984                                                   | 42503                                    | 5020      | 35472    | 2011       | 9.28%                                                          |
| 1997 | 481280                                                   | 46958                                    | 5353      | 39210    | 2395       | 9.76%                                                          |
| 1998 | 490933                                                   | 51001                                    | 6566      | 41237    | 3198       | 10.39%                                                         |
| 1999 | 514723                                                   | 54466                                    | 7008      | 44127    | 3331       | 10.58%                                                         |
| 2000 | 547867                                                   | 59939                                    | 8252      | 48029    | 3658       | 10.94%                                                         |
| 2001 | 582996                                                   | 63211                                    | 8659      | 50969    | 3583       | 10.84%                                                         |
| 2002 | 586323                                                   | 64757                                    | 9484      | 52235    | 3038       | 11.04%                                                         |
| 2003 | 572509                                                   | 61765                                    | 8034      | 50796    | 2935       | 10.79%                                                         |
| 2004 | 565039                                                   | 62523                                    | 8299      | 49293    | 4931       | 11.07%                                                         |
| 2005 | 564766                                                   | 62582                                    | 9304      | 47617    | 5661       | 11.08%                                                         |
| 2006 | 582984                                                   | 65127                                    | 9988      | 47968    | 7171       | 11.17%                                                         |

Note: 1 & 2: data from Open doors Report on International Educational Exchange (1948-2007)

Table 2: US higher education expenses

|      | RMB/USD | (Y/Y-1) | Undergraduate (\$)³ |           |         |          | Tuition for    | Undergraduate (Yuan) |             |           |           | Tuition for |
|------|---------|---------|---------------------|-----------|---------|----------|----------------|----------------------|-------------|-----------|-----------|-------------|
| Year | X-Rate¹ | US CPI² | Board               | Dormitory | Tuition | Total    | Graduate (\$)⁴ | Board_y              | Dormitory_y | Tuition_y | Total_y   | Graduate    |
| 1985 | 2.8027  | 103.56  | 1365.38             | 1338.25   | 2181.04 | 4884.67  |                | 3826.75              | 3750.70     | 6112.81   | 13690.27  |             |
| 1986 | 3.2095  | 101.86  | 1489.03             | 1404.69   | 2312.01 | 5205.73  |                | 4779.04              | 4508.36     | 7420.40   | 16707.80  |             |
| 1987 | 3.7314  | 103.74  | 1548.84             | 1487.63   | 2458.02 | 5494.48  | 3599.00        | 5779.32              | 5550.94     | 9171.84   | 20502.11  | 13429.31    |
| 1988 | 3.7314  | 104.01  | 1636.40             | 1574.58   | 2657.58 | 5868.55  | 3728.00        | 6106.05              | 5875.38     | 9916.48   | 21897.92  | 13910.66    |
| 1989 | 3.7314  | 104.83  | 1730.07             | 1637.91   | 2839.24 | 6207.22  | 4135.00        | 6455.57              | 6111.70     | 10594.34  | 23161.62  | 15429.34    |
| 1990 | 4.7339  | 105.40  | 1802.16             | 1743.26   | 3016.26 | 6561.68  | 4488.00        | 8531.26              | 8252.41     | 14278.66  | 31062.33  | 21245.74    |
| 1991 | 5.2352  | 104.23  | 1917.57             | 1873.98   | 3285.50 | 7077.05  | 5116.00        | 10038.87             | 9810.65     | 17200.26  | 37049.78  | 26783.28    |
| 1992 | 5.4478  | 103.03  | 1996.49             | 1938.81   | 3517.15 | 7452.44  | 5475.00        | 10876.47             | 10562.24    | 19160.71  | 40599.42  | 29826.71    |
| 1993 | 5.7795  | 102.95  | 2046.94             | 2057.08   | 3827.25 | 7931.26  | 5973.00        | 11830.28             | 11888.88    | 22119.58  | 45838.74  | 34520.95    |
| 1994 | 8.6404  | 102.61  | 2115.72             | 2145.32   | 4044.47 | 8305.51  | 6247.05        | 18280.64             | 18536.46    | 34945.87  | 71762.97  | 53977.04    |
| 1995 | 8.3700  | 102.81  | 2198.52             | 2263.79   | 4338.04 | 8800.35  | 6741.01        | 18401.61             | 18947.96    | 36309.37  | 73658.95  | 56422.25    |
| 1996 | 8.3395  | 102.93  | 2276.30             | 2365.37   | 4564.12 | 9205.78  | 7111.07        | 18983.18             | 19725.97    | 38062.48  | 76771.63  | 59302.78    |
| 1997 | 8.3193  | 102.34  | 2388.74             | 2443.99   | 4754.79 | 9587.52  | 7245.91        | 19872.64             | 20332.29    | 39556.49  | 79761.43  | 60280.88    |
| 1998 | 8.3008  | 101.55  | 2505.53             | 2557.28   | 5012.96 | 10075.77 | 7684.62        | 20797.92             | 21227.48    | 41611.57  | 83636.97  | 63788.46    |
| 1999 | 8.2783  | 102.19  | 2524.40             | 2682.03   | 5237.97 | 10444.41 | 8070.81        | 20897.75             | 22202.68    | 43361.51  | 86461.94  | 66812.61    |
| 2000 | 8.2784  | 103.38  | 2622.27             | 2819.01   | 5377.19 | 10818.47 | 8429.49        | 21708.19             | 23336.87    | 44514.55  | 89559.61  | 69782.69    |
| 2001 | 8.2770  | 102.83  | 2752.68             | 2981.09   | 5646.50 | 11380.26 | 8857.26        | 22783.91             | 24674.46    | 46736.07  | 94194.45  | 73311.58    |
| 2002 | 8.2771  | 101.59  | 2832.32             | 3179.01   | 6002.19 | 12013.52 | 9225.64        | 23443.38             | 26312.99    | 49680.73  | 99437.10  | 76361.51    |
| 2003 | 8.2772  | 102.27  | 2985.92             | 3359.25   | 6608.02 | 12953.19 | 10311.94       | 24715.08             | 27805.21    | 54695.88  | 107216.17 | 85354.03    |
| 2004 | 8.2768  | 102.68  | 3099.98             | 3569.47   | 7122.10 | 13791.55 | 11004.40       | 25657.89             | 29543.81    | 58948.24  | 114149.94 | 91081.25    |
| 2005 | 8.1936  | 103.39  | 3223.53             | 3803.77   | 7601.50 | 14628.80 | 11621.09       | 26412.29             | 31166.60    | 62283.64  | 119862.53 | 95218.58    |
| 2006 | 7.9723  | 103.23  | 3368.21             | 4011.10   | 8054.98 | 15434.29 | 12251.05       | 26852.41             | 31977.70    | 64216.69  | 123046.80 | 97669.01    |

Note: 1: Exchange rate data from Federal Reserve  
2: CPI (Consumer Price Index) from IMF (Year/Year-1)  
3 & 4: Expenses data from National Center for Education Statistics

Table 3: Chinese Urban Households, Per Capita Disposable Income

| Year | Per Capita GDP (USD) <sup>1</sup> | Per Capita GDP (RMB) | Urban Per Capita Disposable Income <sup>2</sup> |                            |                         |                                    |                              |                                    |                          |                              |
|------|-----------------------------------|----------------------|-------------------------------------------------|----------------------------|-------------------------|------------------------------------|------------------------------|------------------------------------|--------------------------|------------------------------|
|      |                                   |                      | Weighted Average                                | Lowest Income (1st decile) | Low Income (2nd decile) | Lower Middle income (2nd quintile) | Middle Income (3rd quintile) | Upper Middle income (4th quintile) | High income (9th decile) | Highest Income (10th decile) |
| 1985 | 292                               | 818                  | 739.10                                          |                            |                         |                                    |                              |                                    |                          |                              |
| 1986 | 279                               | 895                  | 899.60                                          |                            |                         |                                    |                              |                                    |                          |                              |
| 1987 | 249                               | 929                  | 1002.20                                         |                            |                         |                                    |                              |                                    |                          |                              |
| 1988 | 281                               | 1049                 | 1181.40                                         |                            |                         |                                    |                              |                                    |                          |                              |
| 1989 | 307                               | 1146                 | 1375.70                                         |                            |                         |                                    |                              |                                    |                          |                              |
| 1990 | 314                               | 1486                 | 1510.20                                         |                            |                         |                                    |                              |                                    |                          |                              |
| 1991 | 330                               | 1728                 | 1700.60                                         |                            |                         |                                    |                              |                                    |                          |                              |
| 1992 | 363                               | 1978                 | 2026.60                                         |                            |                         |                                    |                              |                                    |                          |                              |
| 1993 | 374                               | 2162                 | 2577.40                                         |                            |                         |                                    |                              |                                    |                          |                              |
| 1994 | 469                               | 4052                 | 3496.20                                         |                            |                         |                                    |                              |                                    |                          |                              |
| 1995 | 604                               | 5055                 | 4283.00                                         | 2177.72                    | 2778.49                 | 3363.67                            | 4073.88                      | 4958.42                            | 6036.43                  | 8231.31                      |
| 1996 | 703                               | 5863                 | 4838.90                                         | 2453.62                    | 3148.62                 | 3779.82                            | 4579.98                      | 5599.28                            | 6826.77                  | 9250.44                      |
| 1997 | 774                               | 6439                 | 5160.32                                         | 2430.24                    | 3223.37                 | 3966.23                            | 4894.66                      | 6045.30                            | 7460.70                  | 10250.93                     |
| 1998 | 821                               | 6815                 | 5425.05                                         | 2476.75                    | 3303.17                 | 4107.26                            | 5118.99                      | 6370.59                            | 7877.69                  | 10962.16                     |
| 1999 | 864                               | 7152                 | 5854.02                                         | 2617.80                    | 3492.27                 | 4363.78                            | 5512.12                      | 6904.96                            | 8631.94                  | 12083.79                     |
| 2000 | 949                               | 7856                 | 6279.98                                         | 2653.02                    | 3633.51                 | 4623.54                            | 5897.92                      | 7487.37                            | 9434.21                  | 13311.02                     |
| 2001 | 1042                              | 8625                 | 6859.58                                         | 2802.83                    | 3856.49                 | 4946.60                            | 6366.24                      | 8164.22                            | 10374.92                 | 15114.85                     |
| 2002 | 1135                              | 9395                 | 7702.80                                         | 2408.60                    | 3649.16                 | 4931.96                            | 6656.81                      | 8869.51                            | 11772.82                 | 18995.85                     |
| 2003 | 1274                              | 10545                | 8472.20                                         | 2590.17                    | 3970.03                 | 5377.25                            | 7278.75                      | 9763.37                            | 13123.08                 | 21837.32                     |
| 2004 | 1490                              | 12332                | 9421.61                                         | 2862.39                    | 4429.05                 | 6024.10                            | 8166.54                      | 11050.89                           | 14970.91                 | 25377.17                     |
| 2005 | 1715                              | 14052                | 10493.03                                        | 3134.88                    | 4885.32                 | 6710.58                            | 9190.05                      | 12603.37                           | 17202.93                 | 28773.11                     |
| 2006 | 2027                              | 16160                | 11759.45                                        | 3568.73                    | 5540.71                 | 7554.16                            | 10269.70                     | 14049.17                           | 19068.95                 | 31967.34                     |
| 2007 | 2432                              | 18497                | 13785.81                                        | 4210.06                    | 6504.60                 | 8900.51                            | 12042.32                     | 16385.80                           | 22233.56                 | 36784.51                     |

Note: 1: income data from National Bureau of Statistics of China  
2: Per Capita GDP data from World Development Indicators

Table 4: Chinese Urban Household per capita expenditures

| Urban Household per capita expenditures by income level (Yuan) | Average Total Consumption Expenditures      | Weighted Average                            |                                             |                                             | Lowest Income (first decile)                |                                             |                                             | Low Income (second decile)                  |                                             |                                             | Lower Middle income (second quintile)       |                                             |        |
|----------------------------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|--------|
|                                                                |                                             | Recreation, Education and Cultural Services | Durable Consumer Goods for Recreational Use | Diff                                        | Recreation, Education and Cultural Services | Durable Consumer Goods for Recreational Use | Diff                                        | Recreation, Education and Cultural Services | Durable Consumer Goods for Recreational Use | Diff                                        | Recreation, Education and Cultural Services | Durable Consumer Goods for Recreational Use | Diff   |
| 1995                                                           | 3537.57                                     | 312.71                                      | 77.87                                       | 234.84                                      | 162.99                                      | 14.00                                       | 148.99                                      | 205.85                                      | 29.45                                       | 176.40                                      | 242.65                                      | 40.26                                       | 202.39 |
| 1996                                                           | 3919.47                                     | 374.95                                      | 89.80                                       | 285.15                                      | 191.53                                      | 14.58                                       | 176.95                                      | 233.15                                      | 25.02                                       | 208.13                                      | 293.09                                      | 48.40                                       | 244.69 |
| 1997                                                           | 4185.64                                     | 448.38                                      | 112.50                                      | 335.88                                      | 208.24                                      | 14.35                                       | 193.89                                      | 274.88                                      | 36.00                                       | 238.88                                      | 336.94                                      | 53.57                                       | 283.37 |
| 1998                                                           | 4331.61                                     | 499.39                                      | 125.99                                      | 373.40                                      | 249.35                                      | 26.61                                       | 222.74                                      | 310.44                                      | 40.98                                       | 269.46                                      | 377.26                                      | 61.87                                       | 315.39 |
| 1999                                                           | 4615.91                                     | 567.05                                      | 135.33                                      | 431.72                                      | 286.99                                      | 30.25                                       | 256.74                                      | 355.12                                      | 44.95                                       | 310.17                                      | 440.64                                      | 72.25                                       | 368.39 |
| 2000                                                           | 4998.00                                     | 627.82                                      | 146.92                                      | 480.90                                      | 286.83                                      | 29.34                                       | 257.49                                      | 390.21                                      | 51.23                                       | 338.98                                      | 469.16                                      | 78.47                                       | 390.69 |
| 2001                                                           | 5309.01                                     | 690.00                                      | 139.35                                      | 550.65                                      | 317.03                                      | 22.41                                       | 294.62                                      | 453.07                                      | 70.46                                       | 382.61                                      | 529.59                                      | 77.29                                       | 452.30 |
| 2002                                                           | 6029.88                                     | 902.28                                      | 245.16                                      | 657.12                                      | 317.57                                      | 38.70                                       | 278.87                                      | 425.33                                      | 78.54                                       | 346.79                                      | 576.71                                      | 120.16                                      | 456.55 |
| 2003                                                           | 6510.94                                     | 934.38                                      | 264.47                                      | 669.91                                      | 327.71                                      | 39.58                                       | 288.13                                      | 454.53                                      | 75.28                                       | 379.25                                      | 605.57                                      | 132.59                                      | 472.98 |
| 2004                                                           | 7182.10                                     | 1032.8                                      | 256.65                                      | 776.15                                      | 353.76                                      | 43.91                                       | 309.85                                      | 488.77                                      | 77.25                                       | 411.52                                      | 675.28                                      | 132.82                                      | 542.46 |
| 2005                                                           | 7942.88                                     | 1097.46                                     | 280.21                                      | 817.25                                      | 363.61                                      | 43.28                                       | 320.33                                      | 518.77                                      | 84.41                                       | 434.36                                      | 720.40                                      | 152.45                                      | 567.95 |
| 2006                                                           | 8696.55                                     | 1203.03                                     | 310.26                                      | 892.77                                      | 406.05                                      | 59.28                                       | 346.77                                      | 572.38                                      | 99.41                                       | 472.97                                      | 781.97                                      | 168.27                                      | 613.70 |
| 2007                                                           | 9997.47                                     | 1329.16                                     | 343.17                                      | 985.99                                      | 445.71                                      | 63.16                                       | 382.55                                      | 646.99                                      | 124.33                                      | 522.66                                      | 877.36                                      | 192.63                                      | 684.73 |
|                                                                |                                             |                                             |                                             |                                             |                                             |                                             |                                             |                                             |                                             |                                             |                                             |                                             |        |
|                                                                |                                             |                                             |                                             |                                             |                                             |                                             |                                             |                                             |                                             |                                             |                                             |                                             |        |
| Urban Household per capita expenditures by income level (Yuan) | Middle Income (third quintile)              |                                             |                                             | Upper Middle income 4th quintile            |                                             |                                             | High income ninth decile                    |                                             |                                             | Highest Income 10th decile                  |                                             |                                             |        |
|                                                                | Recreation, Education and Cultural Services | Durable Consumer Goods for Recreational Use | Diff                                        | Recreation, Education and Cultural Services | Durable Consumer Goods for Recreational Use | Diff                                        | Recreation, Education and Cultural Services | Durable Consumer Goods for Recreational Use | Diff                                        | Recreation, Education and Cultural Services | Durable Consumer Goods for Recreational Use | Diff                                        |        |
| 1995                                                           | 293.02                                      | 56.61                                       | 236.41                                      | 362.64                                      | 93.61                                       | 269.03                                      | 443.55                                      | 144.61                                      | 298.94                                      | 597.42                                      | 251.04                                      | 346.38                                      |        |
| 1996                                                           | 356.74                                      | 69.29                                       | 287.45                                      | 431.01                                      | 107.50                                      | 323.51                                      | 511.49                                      | 140.52                                      | 370.97                                      | 735.28                                      | 307.95                                      | 427.33                                      |        |
| 1997                                                           | 421.43                                      | 86.56                                       | 334.87                                      | 532.11                                      | 142.81                                      | 389.30                                      | 671.43                                      | 218.41                                      | 453.02                                      | 885.39                                      | 355.92                                      | 529.47                                      |        |
| 1998                                                           | 473.13                                      | 98.53                                       | 374.60                                      | 590.89                                      | 158.50                                      | 432.39                                      | 720.78                                      | 235.23                                      | 485.55                                      | 963.33                                      | 382.05                                      | 581.28                                      |        |
| 1999                                                           | 552.34                                      | 126.71                                      | 425.63                                      | 689.03                                      | 176.48                                      | 512.55                                      | 789.08                                      | 227.38                                      | 561.70                                      | 1023.88                                     | 364.36                                      | 659.52                                      |        |
| 2000                                                           | 597.55                                      | 130.04                                      | 467.51                                      | 758.84                                      | 188.72                                      | 570.12                                      | 925.35                                      | 270.22                                      | 655.13                                      | 1223.97                                     | 401.49                                      | 822.48                                      |        |
| 2001                                                           | 660.70                                      | 117.93                                      | 542.77                                      | 820.73                                      | 174.35                                      | 646.38                                      | 1040.60                                     | 267.89                                      | 772.71                                      | 1273.10                                     | 363.64                                      | 909.46                                      |        |
| 2002                                                           | 797.52                                      | 199.55                                      | 597.97                                      | 1046.46                                     | 305.17                                      | 741.29                                      | 1373.85                                     | 437.43                                      | 936.42                                      | 2148.56                                     | 678.65                                      | 1469.91                                     |        |
| 2003                                                           | 811.91                                      | 206.49                                      | 605.42                                      | 1102.89                                     | 334.04                                      | 768.85                                      | 1482.57                                     | 493.44                                      | 989.13                                      | 2208.97                                     | 757.35                                      | 1451.62                                     |        |
| 2004                                                           | 901.8                                       | 212.99                                      | 688.81                                      | 1182.09                                     | 301.66                                      | 880.43                                      | 1673.76                                     | 463.03                                      | 1210.73                                     | 2707.79                                     | 824.83                                      | 1882.96                                     |        |
| 2005                                                           | 985.68                                      | 236.60                                      | 749.08                                      | 1336.77                                     | 364.93                                      | 971.84                                      | 1700.23                                     | 493.01                                      | 1207.22                                     | 2907.99                                     | 874.88                                      | 2033.11                                     |        |
| 2006                                                           | 1047.48                                     | 256.91                                      | 790.57                                      | 1469.14                                     | 397.74                                      | 1071.40                                     | 1901.68                                     | 558.64                                      | 1343.04                                     | 3176.07                                     | 943.95                                      | 2232.12                                     |        |
| 2007                                                           | 1172.43                                     | 304.11                                      | 868.32                                      | 1544.20                                     | 408.02                                      | 1136.18                                     | 2092.01                                     | 614.94                                      | 1477.07                                     | 3526.23                                     | 1013.79                                     | 2512.44                                     |        |

Note: Data from National Bureau of Statistics of China - Annual Data

Table 5: Undergraduate Enrollment - Variable selection process

| Coefficients <sup>a</sup> |                             |            |                           |        |                    |
|---------------------------|-----------------------------|------------|---------------------------|--------|--------------------|
| Model                     | Unstandardized Coefficients |            | Standardized Coefficients | t      | Significance level |
|                           | B                           | Std. Error | Beta                      |        |                    |
| 1 (Constant)              | 16533.819                   | 12761.77   |                           | 1.296  | 0.219              |
| Tution                    | -0.96                       | 0.166      | -9.005                    | -5.795 | 0                  |
| Dorm                      | 1.929                       | 0.472      | 8.858                     | 4.09   | 0.001              |
| board                     | 0.341                       | 0.421      | 1.313                     | 0.81   | 0.434              |
| US CPI                    | -158.998                    | 123.112    | -0.077                    | -1.291 | 0.221              |
| Urban per capita Income   | -0.227                      | 0.835      | -0.378                    | -0.272 | 0.79               |
| Per Capita GDP            | 0.565                       | 0.478      | 1.298                     | 1.183  | 0.26               |
| Exchange rate             | -4968.429                   | 710.572    | -1.226                    | -6.992 | 0                  |
| 11-Sep                    | -807.514                    | 614.141    | -0.175                    | -1.315 | 0.213              |
| 2 (Constant)              | 15691.539                   | 11931.453  |                           | 1.315  | 0.211              |
| Tution                    | -0.958                      | 0.159      | -8.99                     | -6.007 | 0                  |
| Dorm                      | 1.887                       | 0.429      | 8.661                     | 4.402  | 0.001              |
| board                     | 0.355                       | 0.403      | 1.367                     | 0.881  | 0.394              |
| US CPI                    | -150.688                    | 114.935    | -0.073                    | -1.311 | 0.213              |
| Per Capita GDP            | 0.449                       | 0.209      | 1.032                     | 2.145  | 0.051              |
| Exchange rate             | -4868.547                   | 586.308    | -1.201                    | -8.304 | 0                  |
| 11-Sep                    | -835.425                    | 583.547    | -0.181                    | -1.432 | 0.176              |
| 3 (Constant)              | 18003.799                   | 11546.282  |                           | 1.559  | 0.141              |
| Tution                    | -0.913                      | 0.15       | -8.571                    | -6.089 | 0                  |
| Dorm                      | 2.173                       | 0.278      | 9.974                     | 7.821  | 0                  |
| US CPI                    | -170.869                    | 111.73     | -0.083                    | -1.529 | 0.148              |
| Per Capita GDP            | 0.295                       | 0.114      | 0.678                     | 2.588  | 0.021              |
| Exchange rate             | -4787.728                   | 574.457    | -1.181                    | -8.334 | 0                  |
| 11-Sep                    | -1189.172                   | 420.202    | -0.257                    | -2.83  | 0.013              |
| 4 (Constant)              | 356.242                     | 410.619    |                           | 0.868  | 0.399              |
| Tution                    | -0.881                      | 0.155      | -8.27                     | -5.685 | 0                  |
| Dorm                      | 2.115                       | 0.287      | 9.709                     | 7.363  | 0                  |
| Per Capita GDP            | 0.252                       | 0.115      | 0.578                     | 2.183  | 0.045              |
| Exchange rate             | -4469.534                   | 558.838    | -1.103                    | -7.998 | 0                  |
| 11-Sep                    | -1016.97                    | 422.514    | -0.22                     | -2.407 | 0.029              |
| 5 (Constant)              | 203.165                     | 449.697    |                           | 0.452  | 0.657              |
| Tution                    | -0.679                      | 0.138      | -6.368                    | -4.917 | 0                  |
| Dorm                      | 1.826                       | 0.283      | 8.382                     | 6.444  | 0                  |
| Exchange rate             | -4816.398                   | 595.513    | -1.189                    | -8.088 | 0                  |
| September-09              | -634.436                    | 427.337    | -0.137                    | -1.485 | 0.157              |
| 6 (Constant)              | 479.753                     | 423.538    |                           | 1.133  | 0.273              |
| Tution                    | -0.718                      | 0.14       | -6.736                    | -5.12  | 0                  |
| Dorm                      | 1.858                       | 0.292      | 8.529                     | 6.355  | 0                  |
| Exchange rate             | -4264.739                   | 481.562    | -1.052                    | -8.856 | 0                  |

| Model Summary |                   |          |                   |                            |
|---------------|-------------------|----------|-------------------|----------------------------|
| Model         | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1             | .988 <sup>a</sup> | .977     | .961              | 398.442                    |
| 2             | .988 <sup>b</sup> | .976     | .964              | 383.989                    |
| 3             | .987 <sup>c</sup> | .975     | .964              | 380.916                    |
| 4             | .985 <sup>d</sup> | .971     | .961              | 397.551                    |
| 5             | .981 <sup>e</sup> | .962     | .952              | 441.875                    |
| 6             | .978 <sup>f</sup> | .956     | .949              | 457.256                    |

**Table 6: Undergraduate Enrollment (continued)**

Dependent variable: Chinese student enrolled in US undergraduate education

(Data range: 1995 - 2006)

| Independent variables:                                                      | (1)                     | (2)                     | (3)                     | (4)                     | (5)                     | (6)                     | (7)                     | (8)                     | (9)                     |
|-----------------------------------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Related Expenses                                                            |                         |                         |                         |                         |                         |                         |                         |                         |                         |
| Tuition                                                                     | -0.587*<br>(0.196)      | -0.349*<br>(0.061)      | -0.320*<br>(0.076)      | -0.329*<br>(0.075)      | -0.350*<br>(0.073)      | -0.313*<br>(0.047)      | -0.435*<br>(0.057)      | -0.261*<br>(0.031)      | -0.318*<br>(0.072)      |
| Dormitory                                                                   | 1.010<br>(0.693)        |                         |                         |                         |                         |                         |                         |                         |                         |
| Urban Household per capita expenditures on Education, etc (by income level) |                         |                         |                         |                         |                         |                         |                         |                         |                         |
| Weighted Average                                                            | 14.500*<br>(6.088)      | 24.774*<br>(2.680)      | 20.497*<br>(5.705)      | 17.853*<br>(5.164)      | 25.402*<br>(9.888)      | 2.819<br>(12.831)       | 3.558<br>(11.353)       | 42.504*<br>(5.110)      | 25.674*<br>(3.566)      |
| First Decile                                                                |                         |                         | 7.850<br>(9.912)        |                         |                         |                         |                         |                         |                         |
| Second Decile                                                               |                         |                         |                         | 10.164<br>(7.694)       |                         |                         |                         |                         |                         |
| Second Quintile                                                             |                         |                         |                         |                         | -0.771<br>(10.983)      |                         |                         |                         |                         |
| Third Quintile                                                              |                         |                         |                         |                         |                         | 22.289<br>(13.420)      |                         |                         |                         |
| Fourth Quintile                                                             |                         |                         |                         |                         |                         |                         | 19.461<br>(10.268)      |                         |                         |
| Ninth Decile                                                                |                         |                         |                         |                         |                         |                         |                         | -13.881*<br>(3.173)     |                         |
| Tenth Decile                                                                |                         |                         |                         |                         |                         |                         |                         |                         | -0.907<br>(1.009)       |
| September, 11                                                               | -1238.354*<br>(480.654) | -1100.92*<br>(348.835)  | -648.611<br>(635.092)   | -184.250<br>(593.351)   | -1154.807<br>(947.934)  | -195.632<br>(645.040)   | -173.449<br>(469.236)   | -603.606**<br>(266.184) | -855.921*<br>(360.553)  |
| Constant                                                                    | 3586.204<br>(5206.252)  | 11486.53*<br>(1629.203) | 10186.72*<br>(2485.058) | 10508.45*<br>(2104.564) | 11551.38*<br>(2206.508) | 9941.205*<br>(1206.235) | 14489.43*<br>(1693.446) | 8154.529*<br>(929.442)  | 10424.24*<br>(2151.103) |
| N                                                                           | 12                      | 12                      | 12                      | 12                      | 12                      | 12                      | 12                      | 12                      | 12                      |
| R-squared                                                                   | 0.9660                  | 0.9544                  | 0.9561                  | 0.9579                  | 0.9544                  | 0.9640                  | 0.9663                  | 0.9808                  | 0.9555                  |

\* Statistically significant at 5% level

\*\* Statistically significant at 10% level

Table 7: Graduate Enrollment - Variable selection Process

| Coefficients <sup>a</sup> |                         |                             |            |                           |        |                    |
|---------------------------|-------------------------|-----------------------------|------------|---------------------------|--------|--------------------|
| Model                     |                         | Unstandardized Coefficients |            | Standardized Coefficients | t      | Significance level |
|                           |                         | B                           | Std. Error | Beta                      |        |                    |
| 1                         | (Constant)              | -97582.430                  | 153226.028 |                           | -.637  | .539               |
|                           | Tuition                 | .196                        | .315       | .637                      | .622   | .548               |
|                           | Undergrad Enrollment    | -2.303                      | .862       | -.626                     | -2.671 | .023               |
|                           | US CPI                  | 1167.809                    | 1454.965   | .149                      | .803   | .441               |
|                           | Urban per capita Income | 14.116                      | 6.494      | 5.676                     | 2.174  | .055               |
|                           | Per Capita GDP          | -8.365                      | 3.806      | -4.749                    | -2.198 | .053               |
|                           | Exchange Rate           | -1198.932                   | 6262.439   | -.070                     | -.191  | .852               |
|                           | 11-Sep                  | -1116.976                   | 4073.049   | -.065                     | -.274  | .789               |
| 2                         | (Constant)              | -103713.125                 | 143130.750 |                           | -.725  | .484               |
|                           | Tuition                 | .154                        | .217       | .501                      | .710   | .492               |
|                           | Undergrad Enrollment    | -2.378                      | .733       | -.646                     | -3.245 | .008               |
|                           | US CPI                  | 1233.606                    | 1350.465   | .157                      | .913   | .381               |
|                           | Urban per capita Income | 14.535                      | 5.840      | 5.844                     | 2.489  | .030               |
|                           | Per Capita GDP          | -8.508                      | 3.565      | -4.830                    | -2.386 | .036               |
|                           | 11-Sep                  | -826.524                    | 3610.641   | -.048                     | -.229  | .823               |
| 3                         | (Constant)              | -104113.228                 | 137353.037 |                           | -.758  | .463               |
|                           | Tuition                 | .180                        | .177       | .586                      | 1.018  | .329               |
|                           | Undergrad Enrollment    | -2.415                      | .686       | -.656                     | -3.522 | .004               |
|                           | US CPI                  | 1240.448                    | 1295.730   | .158                      | .957   | .357               |
|                           | Urban per capita Income | 13.748                      | 4.531      | 5.528                     | 3.034  | .010               |
|                           | Per Capita GDP          | -8.149                      | 3.073      | -4.626                    | -2.652 | .021               |
| 4                         | (Constant)              | 27339.557                   | 3382.251   |                           | 8.083  | .000               |
|                           | Tuition                 | .066                        | .131       | .215                      | .506   | .621               |
|                           | Undergrad Enrollment    | -2.253                      | .662       | -.612                     | -3.401 | .005               |
|                           | Urban per capita Income | 12.568                      | 4.346      | 5.053                     | 2.892  | .013               |
|                           | Per Capita GDP          | -6.865                      | 2.756      | -3.897                    | -2.491 | .027               |
| 5                         | (Constant)              | 27714.541                   | 3211.290   |                           | 8.630  | .000               |
|                           | Undergrad Enrollment    | -2.183                      | .630       | -.593                     | -3.463 | .004               |
|                           | Urban per capita Income | 13.869                      | 3.411      | 5.577                     | 4.066  | .001               |
|                           | Per Capita GDP          | -7.448                      | 2.436      | -4.228                    | -3.057 | .009               |

| Model Summary |                   |          |                   |                            |
|---------------|-------------------|----------|-------------------|----------------------------|
| Model         | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1             | .952 <sup>a</sup> | .906     | .841              | 3137.992                   |
| 2             | .952 <sup>b</sup> | .906     | .855              | 2997.436                   |
| 3             | .952 <sup>c</sup> | .905     | .866              | 2876.654                   |
| 4             | .948 <sup>d</sup> | .898     | .867              | 2867.400                   |
| 5             | .947 <sup>e</sup> | .896     | .874              | 2790.198                   |

**Table 8: Graduate Enrollment (continued)**

Dependent variable: Chinese student enrolled in US graduate education

(Data range: 1995 - 2006)

| Independent variables:                                         | (1)                     | (2)                      | (3)                     | (4)                    | (5)                     | (6)                     | (7)                     | (8)                       | (9)                     |
|----------------------------------------------------------------|-------------------------|--------------------------|-------------------------|------------------------|-------------------------|-------------------------|-------------------------|---------------------------|-------------------------|
| US Undergrad Enrollment                                        | -1.400*<br>(0.525)      | -1.661*<br>(0.327)       | -1.666*<br>(0.506)      | -1.663*<br>(0.496)     | -1.631*<br>(0.516)      | -1.675*<br>(0.532)      | -1.749*<br>(0.506)      | -1.684*<br>(0.377)        | -1.561*<br>(0.581)      |
| Chinese Per Capita GDP                                         | -0.001*<br>(0.000)      | -0.001*<br>(0.000)       | -0.001*<br>(0.000)      | -0.001*<br>(0.000)     | -0.001*<br>(0.000)      | -0.001*<br>(0.000)      | -0.001*<br>(0.000)      | -0.001*<br>(0.000)        | -0.001*<br>(0.000)      |
| Urban per capita average expenditures on Education, etc        | 14.189<br>(14.996)      |                          |                         |                        |                         |                         |                         |                           |                         |
| Urban Household per capita disposable income (by income level) |                         |                          |                         |                        |                         |                         |                         |                           |                         |
| Weighted Average                                               | 16.225*<br>(4.595)      | 18.846*<br>(0.964)       | 18.830*<br>(1.917)      | 18.843*<br>(1.589)     | 18.871*<br>(1.222)      | 18.870*<br>(0.853)      | 19.331*<br>(1.632)      | 20.889*<br>(2.712)        | 19.490*<br>(3.220)      |
| First Decile                                                   |                         |                          | -0.026<br>(1.934)       |                        |                         |                         |                         |                           |                         |
| Second Decile                                                  |                         |                          |                         | -0.009<br>(1.945)      |                         |                         |                         |                           |                         |
| Second Quintile                                                |                         |                          |                         |                        | 0.183<br>(2.035)        |                         |                         |                           |                         |
| Third Quintile                                                 |                         |                          |                         |                        |                         | -0.089<br>(2.282)       |                         |                           |                         |
| Fourth Quintile                                                |                         |                          |                         |                        |                         |                         | -0.711<br>(2.527)       |                           |                         |
| Ninth Decile                                                   |                         |                          |                         |                        |                         |                         |                         | -1.467<br>(1.689)         |                         |
| Tenth Decile                                                   |                         |                          |                         |                        |                         |                         |                         |                           | -0.156<br>(0.621)       |
| September, 11                                                  | -905.374<br>(1257.53)   |                          |                         |                        |                         |                         |                         |                           |                         |
| Constant                                                       | -5242.694<br>(12720.95) | -9065.459*<br>(3682.476) | -8944.545<br>(11048.52) | -9026.74<br>(10671.18) | -9758.513<br>(10377.59) | -8803.483<br>(9295.132) | -7767.784<br>(7108.248) | -9918.486**<br>(4281.741) | -10960.47<br>(9980.613) |
| N                                                              | 12                      | 12                       | 12                      | 12                     | 12                      | 12                      | 12                      | 12                        | 12                      |
| R-squared                                                      | 0.9931                  | 0.9921                   | 0.9921                  | 0.9921                 | 0.9921                  | 0.9921                  | 0.9922                  | 0.9927                    | 0.9922                  |

\* Statistically significant at 5% level

\*\* Statistically significant at 10% level